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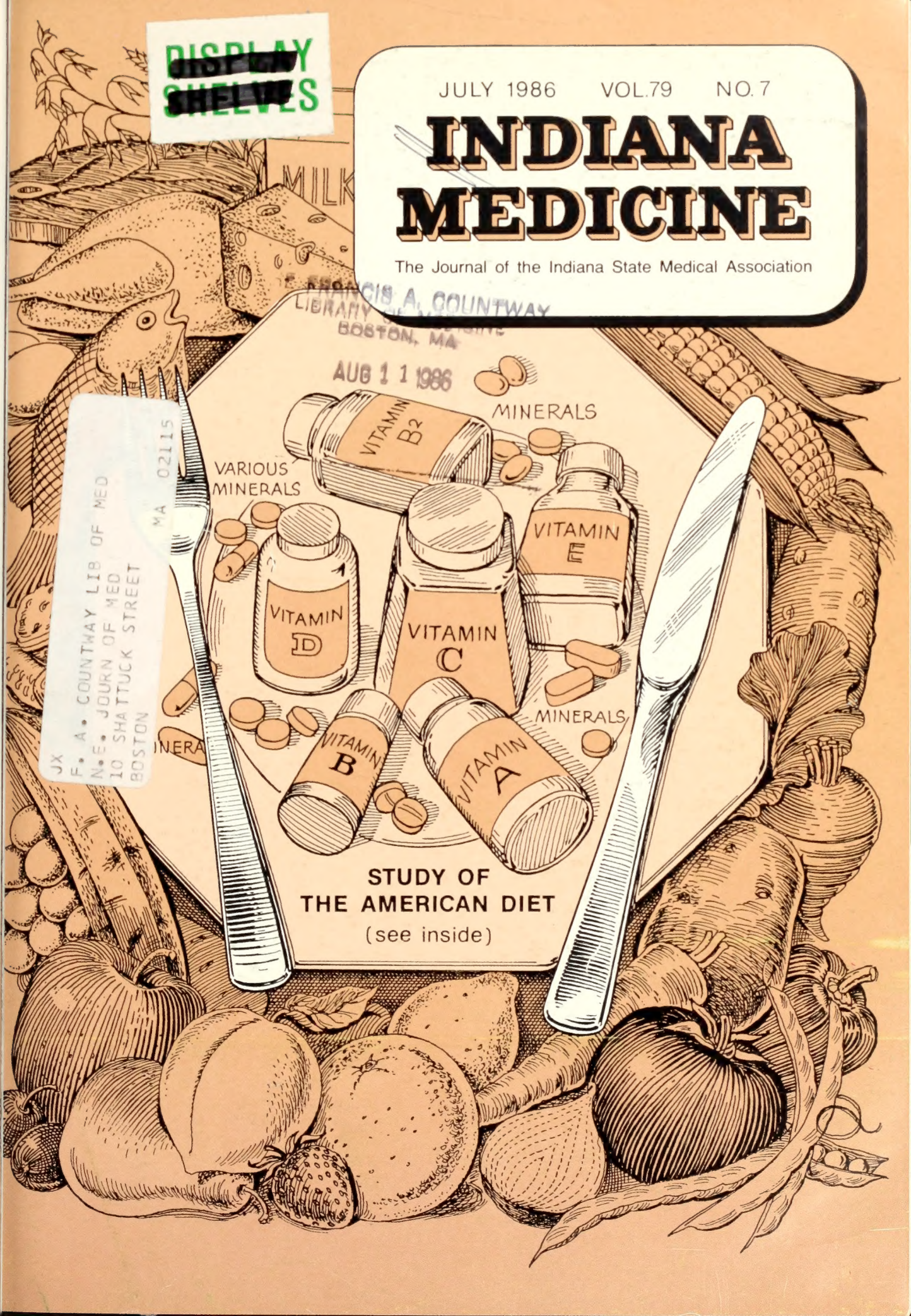
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JULY 1986 VOL.79 NO.7

INDIANA MEDICINE

The Journal of the Indiana State Medical Association

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STUDY OF THE AMERICAN DIET

(see inside)

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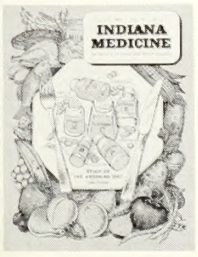
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ABOUT THE COVER

"One has no need of a vitamin-mineral supplement if he eats a good balanced diet." Fact or fiction? Our report, "Study of the American Diet," explores this maxim. The conclusions of the authors may be at odds with the results of an opinion survey of physicians they recently completed.—COVER BY FRED KINGHORN

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MEDICAL MUSEUM NOTES

CHARLES A. BONSETT, M.D., Indianapolis



Drug Tampering: How a Case in Indiana Was Solved Quickly 70 Years Ago

AN EVENT CURRENTLY causing headlines concerns a former stock brokerage clerk who has been arrested for drug tampering. Allegedly, he added rat poison to certain over-the-counter drugs manufactured by the SmithKline Beckman Corporation of Philadelphia. The clerk's motive was a get-rich-quick scheme in which the public anxiety and adverse publicity resulting from the poisoned capsules' use would cause the value of the company's stock to fall. This demented act calls to mind the Tegretol tampering of several years ago, which has yet to be explained.

It also calls to mind another drug tampering case that took place here in Indiana during the early part of the century—a case that *was* solved, and solved quite quickly.

The event transpired in Owen County over a period of about a year, reaching the newspaper headline stage in May and June, 1915. At least 26 people were recipients of a poisoned drug, this consisting of quinine—a common cold remedy of the time—to which strychnine had been added. The quinine was labeled in its original proprietary bottle, and around this was a small band on which the words "free sample" had been printed with a typewriter. The intended victim received his "free sample" through the mail. All packages were postmarked Indianapolis, but the mailing dates ranged from October 1914 to May 1915.

Among the recipients of these "free samples" were two Owen County physicians, Dr. William McQueen of Quincy and Dr. R. H. Richards of Patricksburg. Dr. Richards, who was Owen County's deputy health officer, noticed that the seal on his bottle had been broken, which seemed unusual, plus the fact that there was no accompanying letter from the pharmaceutical company. He put the "free sample" into a box where he kept poisons and gave it no more thought.

The seal on Dr. McQueen's bottle had also been broken but he didn't notice this at the time. It was Dr. McQueen's custom to pass his drug samples along to his patients, so the sample was placed on his drug shelf. It was in powder form rather than in tablets, an inconvenience that kept the doctor from giving it to his patients.

The "free sample" remained untouched until it was sent to the state chemist for analysis a number of months later. At the time Dr. McQueen had received the sample, a malicious unfounded rumor was being circulated in Quincy that the doctor was overdosing his patients.

Another "free sample" recipient was a Freedom widow, Mrs. Strauss, whose husband had died suddenly in 1914. She took a small dose of her "free sample" and was found unconscious later in the day by a neighbor. Mrs. Strauss would later recall that as soon as she took the drug her "muscles hardened."

Yet another recipient was Mr. Charles Surber, who had been elected Owen County recorder in the November 1914 election. During the campaign, Mr. Surber developed a severe cold and it was at this time that he received his "free sample" of cold medicine. He also observed that the seal on his bottle had been broken. He put the drug aside and did not use it. About this time, a rumor was circulating in Spencer that Surber would not live to serve his term even if elected. In addition, an anonymous typewritten circular announced, among other things, that Mr. Surber was incompetent.

Months later, he was struck with the similarity of the type on the circular with the type on the "free sample." They both appeared to be from the same machine. At this point, Mr. Surber decided to have the sample analyzed. He took it by train the following day to Indianapolis to the state chemist, who immediately detected strychnine. The Owen County prosecutor was notified and the story was given to the press. It appeared the next morning, May 14, 1915, on page 1 of *The Indianapolis Star*.

Coincidentally, on May 14 three additional residents of Owen County received "free samples" in their mail. Alerted by the front page news, these and numerous other samples soon found their way to the state chemist.

The appearance of the three samples on May 14, which had been mailed in Indianapolis the previous day, was a significant event because it automatically directed attention to the Owen County coroner, who happened also to be the undertaker of Spencer. (Let's identify him here as Mr. "X.") Mr. "X" was seen on the same train to Indianapolis the day the most recent samples were mailed (one of which was sent to the undertaker of Patricksburg). The prosecutor recalled that there had been a number of unusual and mysterious deaths in Owen County in recent months, none of which had prompted an inquest by the coroner. One of these was a domestic in the coroner's own household. Another had been the husband of Mrs. Strauss for whom Mr. "X" had been the undertaker. Still another was Spencer's Presbyterian minister whose sudden death had been initiated by a series of convulsions, and for whom Mr. "X" also served as undertaker.

The final victim of the "free sample" was Mr. "X" himself, whose sudden death by suicide was followed by very early onset *rigor mortis*. At the inquest, three Owen County physicians testified that this was a characteristic feature of strychnine poisoning. Confirmation by analysis of the victim's stomach was delayed because it was lost in transit to the chemist's laboratory.



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WHAT'S NEW?

Fisher Scientific has a truly portable ultrasound scanner. It is a real-time ultrasound sector scanner that weighs a scant four pounds and costs thou sands of dollars less than anything available to date. The Damon Scan-Mate brings a new level of flexibility to hospital radiology. It can serve as backup to a fixed scanner, and as an adjunct in suites dedicated to other imaging modalities. It is equally at home in a neonatal nursery, trauma center, and operating room. With scan rates of up to 40 frames per second, it allows the user to analyze the dynamics required in cardiovascular studies.

Edward Weck & Company announces a new nasal forcep for septo rhinoplasty. The Cukier Nasal Forcep is designed to achieve a more controlled, accurate, straight cut of the dorsal septal cartilage when performing a rhino plasty. Irregularities are reduced and the line of the cut is much straighter than that obtained by free-hand cutting.

Advanced Computer Systems has an innovative medical software package, MEDACS/MEDACSES™, that features a direct physician-hospital in terlink. MEDACSES allows physicians using personal computers to gain immediate access to a hospital's mainframe computer. Using this network, physicians can receive significant information concerning hospitalized patients such as medical histories, physical examinations, laboratory reports, patient discharge summaries, radiologic reports, and names and phone numbers of the professional staff members. Physicians may also transmit information to the hospital such as instructions for nurses and demographic data to expedite admission.

Burroughs Wellcome has FDA ap proval for marketing Digibind®, Digoxin Immune Fab (Ovine). The preparation is the first specific antidote for digoxin intoxication. Digibind is derived from digoxin antibodies and is effective for both digoxin- and digitoxin-caused intoxication.

Boehringer Ingelheim Pharmaceuticals announces a new orally effective lidocaine congener, MEXITIL® (mexiletine HC1). It is recommended for treatment of symptomatic ventricular arrhythmias, including frequent premature ventricular complexes, couplets, and ventricular tachycardia. It is similar to lidocaine in structure and action.

Abbott Laboratories announces a new blood test which measures levels of an enzyme, known as terminal deoxynucleptidyl transferase (TdT). It enables physicians to continuously monitor leukemia patients without taking bone marrow specimens. The test is cost-effective at $35 versus bone marrow aspiration at $110. It is also less painful.

The Society for the Right to Die has just published "Handbook of 1985 Living Will Laws." The Handbooks for 1981 to 1984 are also available.

Midmark Corporation has introduced a new chair designed specifically for drawing blood. A key feature of the model 465 chair is patient comfort. It is extremely stable and has a vinyl padded seat and contoured back that helps the patient relax.

Burroughs Wellcome announces FDA approval for marketing a preparation for treatment of head lice. Nix™ (Permethrin 1% creme rinse) is the first head lice treatment to kill both lice and nits (eggs) and to provide protection from reinfestation for up to 14 days with a single application. It is available on prescription.

News of what is new in the medical supply industry is composed of abstracts from news releases by book publishers and manufacturers of pharmaceuticals, clinical laboratory supplies, instruments and surgical appliances. Each item is published as news and does not necessarily constitute an endorsement of a product or recommendation for its use by INDIANA MEDICINE or by the Indiana State Medical Association.

Harris Business Information Systems announces literature describing its new medical office software package. Called Practi-Care™, the package is a computer program designed to operate on the Lanier PC™, IBM-PC® or most other micro-computers supporting the MS-DOS® operating system. It was developed to aid physicians with better practice management, faster collections and better patient care.

Smith Kline and French is now marketing 'Tazicef' brand of ceftazidime, an antibiotic which is an important advance in the treatment of infections due to Pseudomonas aeruginosa. Given by intramuscular or intravenous injection, 'Tazicef' is a semi-synthetic, beta-lactam antibiotic. It is effective over a wide variety of susceptible organisms.

USV Laboratories is introducing GASTROLYTE, a new nonprescription product for oral rehydration in diarrhea. It meets the standards recommended by the World Health Organization for oral rehydration in diarrhea. Pleasant-tasting and easy to use, GASTROLYTE is appropriate for patients of all ages and is compatible with all antidiarrheal medications.

A filing cabinet is now available that has all the advantages of open shelf filing with the privacy of a roll-top cover. It is manufactured by Safeguard Business Systems. Files are housed in wood custom-made six-tier cabinets. The units are finished with durable, high-pressure laminates, applied to a wooden core. They resist scuffing, scratching, burning, shipping and denting.

Hewlett-Packard introduces digital-to-video interface for large-screen display of patient vital signs. The HP 78355A digital-to-video interface will provide large-screen display of vital signs on commercially available video monitors. It will collect data from up to two HP adult or neonatal monitors. Data are displayed simultaneously in color or monochrome on standard video monitors.

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FUTURE FILE

Rhinoplasty Issues

"Controversial Issues in Rhinoplasty" is the title of an inter disciplinary symposium scheduled for Nov. 19 to 22 at the Waldorf Astoria Hotel, New York City.

The course is sponsored by the Manhattan Eye, Ear and Throat Hospital and the Institute of Reconstructive Plastic Surgery. This advanced course will explore the troublesome, complex and controver sial aspects of rhinoplasty. It is designed for the experienced surgeon with training in otolaryngology or plastic surgery. Registration fee is $650, except for residents-in-training, who will be charged $300.

Contact Francine Leinhardt, Manhattan Eye, Ear and Throat Hospital, 210 E. 64th St., New York, N.Y. 10021—(212) 838-9200, ext. 2776.

Methodist Hospital CME

Sept. 12: Heart Symposium, Methodist Hospital, Indianapolis.

Sept. 17-18: As the Child Is Bent, with guest speaker George Tarjan, M.D., child psychiatrist, Los Angeles; at Methodist Hospital auditorium, Indianapolis.

Sept. 26-27: Advanced Trauma Life Support, Methodist Hospital, Indianapolis.

For more information, contact Dixie Estridge, CME coordinator, Graduate Medical Center, Methodist Hospital of Indiana—(317) 929-3733.

Emergency Care Problems

The Sixth Annual Current Emer gency Care Problems Conference will be conducted Sept. 11 and 12 at the Sheraton Inn and Conference Center, Madison, Wisc.

The program is organized for physicians and other health care professionals. AMA Category 1 credit is 12 hours.

For more information, contact Sarah Aslakson, 465B WARF Bldg., 610 Walnut St., Madison, Wisc. 53705—(608) 263-2856.

AMA Communications

The AMA National Communications Conference will be held Oct. 24 and 25 at the Ambassador West Hotel in Chicago.

Subjects discussed will include professional liability, cost of health care, Medicare reimbursement, competition, physician image and patient education. There also will be optional seminars on Oct. 23 devoted to enhancing media skills.

Correspond with the AMA Division of Communications, 535 N. Dearborn, Chicago 60610.

Critical Care Symposium

The Fifth Annual Chicago Critical Care Symposium will be conducted Sept. 25-28 at the Chicago Marriott Downtown Hotel.

The fee for physicians is $360, and for physicians-in-training, nurses and allied health specialists, $220. The symposium is sponsored by the University of Health Sciences/The Chicago Medical School.

For further information, call (312) 578-3215.

Pediatrics Lecture

The Louisville Pediatrics Society Lectureship will be held Thursday, Oct. 9 at 11 a.m. in the Kossair Children's Hospital auditorium, 200 E. Chestnut St., Louisville.

Dr. B. F. Andrews, Professor of Pediatrics, will speak on "Conquest of Volume Control in the Newborn."

The correspondent is Pat Gregg, Dept. of Pediatrics, University of Louisville, Louisville, Ky. 40292—(502) 562-8826.

The *Journal of the American Medical Association* publishes a list of CME courses for the United States twice yearly. The January listing features courses offered from March through August; the July listing features courses offered from September through February.

Plastic Surgery

An advanced course on Plastic Surgery of the Breast, sponsored by the Plastic Surgery Educational Foundation, will meet Sept. 2 to 5 at Santa Fe, N.M.

For details, including registration, contact the Plastic Surgery Educational Foundation, Suite 1900, 233 N. Michigan Ave., Chicago 60601—(312) 856-1818.

Perinatal Nutrition

"Crucial Role of Nutrition Before and Immediately After Birth" will be the topic for a Bristol-Myers Symposium on August 28 and 29 at the Grand Hotel, Saltsjobaden, Sweden.

The meeting is being organized by the Karolinska Institute and will include 36 scientists from eight countries as faculty. Saltsjobaden is close to Stockholm.

The correspondent is Ralph D. Weaver, Bristol-Myers Company, (212) 546-4339.

Management Program

The American Academy of Medical Directors announces a CME program on "The Management of Professionals in Organizations: A Team Approach to Leadership and Management," which will meet at Peaceful Valley Lodge, Denver, Colo., Sept. 24 to 27. CME credits add up to 28.

For details, contact Sherry Mason, AAMD, 4830 W. Kennedy Blvd., Suite 648, Tampa, Florida 33609—(813) 873-2000.

Hospice Care

The Third Annual Hospice Care National Conference meets Aug. 12 to 14 at the Sheraton-Sand Key Resort in Clearwater Beach, Fla.

A special pre-conference session on Aug. 11 is designed specifically for those attending from new and developing hospice programs.

The correspondent is Angela Cyr, R.N.—(813) 521-1199.

Infectious Diseases

"Advances in the Management of Infectious Diseases" is to be the subject of a CME conference July 26-28 at the Grand Hotel, Mackinac Island, Mich.

CME credit of 10.3 hours has been approved for ACCME Category 1, the American Academy of Family Practice and the American Osteopathic Association. The fee is $240.

The correspondent is Betty Phillips, Office of CME, University of Michigan Medical School—(313) 763-1400.

Advances in Pediatrics

"Current Advances in Pediatrics" is the subject of a three-day CME program Oct. 17 to 19 at the Disneyland Hotel in Anaheim, Calif. The sponsors are the Orange County Pediatric Society, American Academy of Pediatrics and UCI Medical Center.

Write Orange County Pediatric Society, P.O. Box 1297, Orange, Calif. 92668.

Medinfo 86

The Fifth World Congress on Medical Informatics meets Oct. 26 to 30 at the Sheraton Washington Hotel, Washington, D.C. The program will contain contributions by the Symposium on Computer Applications in Medical Care and the American Association for Medical Systems and Informatics.

Correspond with the Medinfo 86 Secretariat, Office of CME, George Washington University, 2300 K St., N.W., Washington, D.C. 20037.

Dollars and Nutrition

"Nutrition Support: Impact of Cost Containment" is to be the subject of the 1986 Postgraduate Course of the American Society for Parenteral and Enteral Nutrition, which will be conducted Sept. 11 and 12 at the Hyatt Regency Cincinnati, Ohio.

Contact Kelly G. Tilton, ASPEN, 8605 Cameron St., Suite 500, Silver Spring, Md. 20910—(301) 587-6315.

HMSS Annual Meeting

The ISMA Hospital Medical Staff Section will conduct its annual meeting Sunday, Sept. 7, at the Embassy Suites North, Indianapolis.

Model medical staff bylaws will be discussed in depth for approval by the HMSS and subsequent submission to the 1986 ISMA House of Delegates.

All interested ISMA members are invited to attend. Registration fee is $15, payable in advance. Registration at the door will be $20. The fee includes lunch. Registration begins at 8 a.m., with the meeting set to begin at 9 a.m.

For more information contact Beckett Shady-King at ISMA headquarters.

Vascular Surgery

"Controversies and Critical Issues in Vascular Surgery" will be the main subject at the 16th annual Peripheral Vascular Disease Symposium, which meets Sept. 24 to 27 at the Hyatt on Capitol Square in Columbus, Ohio.

The meeting is sponsored by the St. Anthony Medical Center. Concurrent programs will run for physicians, nurses and vascular technologists. Category 1 credit is 21 hours.

Contact Shelly Hershberger, St. Anthony Medical Center, 1492 E. Broad St., Suite 1100, Columbus, Ohio 43205—(614) 251-3680.



"Here you are. Meals on Wheels."

Newborn Symposium

The 20th Annual Newborn Symposium of the Dept. of Pediatrics, School of Medicine, University of Louisville, will meet Oct. 9 and 10 at the Kosair Children's Hospital auditorium, 200 E. Chestnut St., Louisville.

The correspondent is Pat Gregg, Dept. of Pediatrics, University of Louisville, Louisville, Ky. 40292—(502) 562-8826.

Hand Surgery

"Difficult Problems in Hand Surgery" is the title of a course to be sponsored by the American Society for Surgery of the Hand Oct. 20 to 22 in Indianapolis.

The course chairmen are Drs. James W. Strickland, James B. Steichen, William B. Kleinman, Hill Hastings and Richard B. Idler. A distinguished national faculty will lecture. The chairmen will moderate the groups of experts and will present a set of cases with slides to create discussion of the problems presented. Tuition for physicians will be $425 if paid by Sept. 22, $475 after.

For details, contact the Society at 3025 S. Parker Road, Suite 65, Aurora, Colo. 60014—(303) 755-4588.

Echocardiography

"Doppler and 2-D Echocardiography" is the subject of a symposium to be sponsored by Johns Hopkins University School of Medicine and the Institute for Medical Studies. It will be conducted Sept. 7 to 13 in Washington, D.C.

The fees: Course I, Basic Echocardiography, $295; Course II, Basic Doppler Echo, $295; Course III, Clinical Doppler Echo, $395; Course I and II, $495; Course II and III, $595; entire symposium, $795. Category 1 credit: 43 hours.

Contact Kim Stroich, Institute for Medical Studies, 30131 Town Center Drive, Suite 215, Laguna Niguel, Calif. 92677.

CANCER CORNER

WILLIAM M. DUGAN, JR., M.D.
Methodist Hospital Cancer Care Center, Indianapolis

The American Cancer Society's 1986 "I Can Cope" classes in Indianapolis meet on Tuesdays and Thursdays for three weeks. Classes meet from 6:30 to 8:30 p.m. The next session dates are Aug. 12 and 14, Aug. 19 and 21, and Aug. 26 and 28.

Classes are conducted at Northminster Presbyterian Church, 1660 Kessler Blvd. E. Drive, Indianapolis. For more information, call the ACS at 317-923-2225.

"I Can Cope" goals are to give patients and their families information about cancer, diagnostic procedures, treatment and self-care management. The importance of attitude is explored by learning effective ways of coping with cancer's impact on physical and emotional well-being. The program also acquaints patients and families with resources available in their community. Classes are mainly educational, but offer opportunities to share experiences with other participants.

Program topics are: Coping with the Fact; Anatomy—What Is Happening to Me; Normal Living Adjustments; Coordinating Diet and Activity; Evaluating Your Feelings; and Resources for Living.

The National Conference on Gynecologic Cancer—1986 will be held Sept. 17-19 at the Atlanta Hilton, Atlanta, Ga. It is being organized by the American Cancer Society in cooperation with the American Academy of Family Physicians, American College of Obstetricans and Gynecologists, Oncology Nursing Society and the Society of Gynecologic Oncologists. For details, write ACS, 90 Park Ave., New York, N.Y. 10016.

Medical Education Teaching Aid: Equianalgesic Conversion Charts are available from the Methodist Hospital Cancer Care Center, 317-929-8288. The charts have been provided by George Snider, hospital representative of The Purdue Frederick Company. They were reproduced by permission from the M.H. Levey Symptom Control Manual appearing in *Clinical Care of the Terminal Cancer Patient* (Cassileth B and Cassileth PL, eds, pp 214-216, Lea & Feiberger, Philadelphia, 1982).

Cancer Work Book: A new "dictionary" provided by the American Cancer Society defines some of the medical and scientific terms commonly used by physicians, nurses, researchers and technicians who deal with cancer on a daily basis. The book is available through local ACS units or from Marcell Dekker, Inc., 270 Madison Ave., New York, N.Y. 10016.

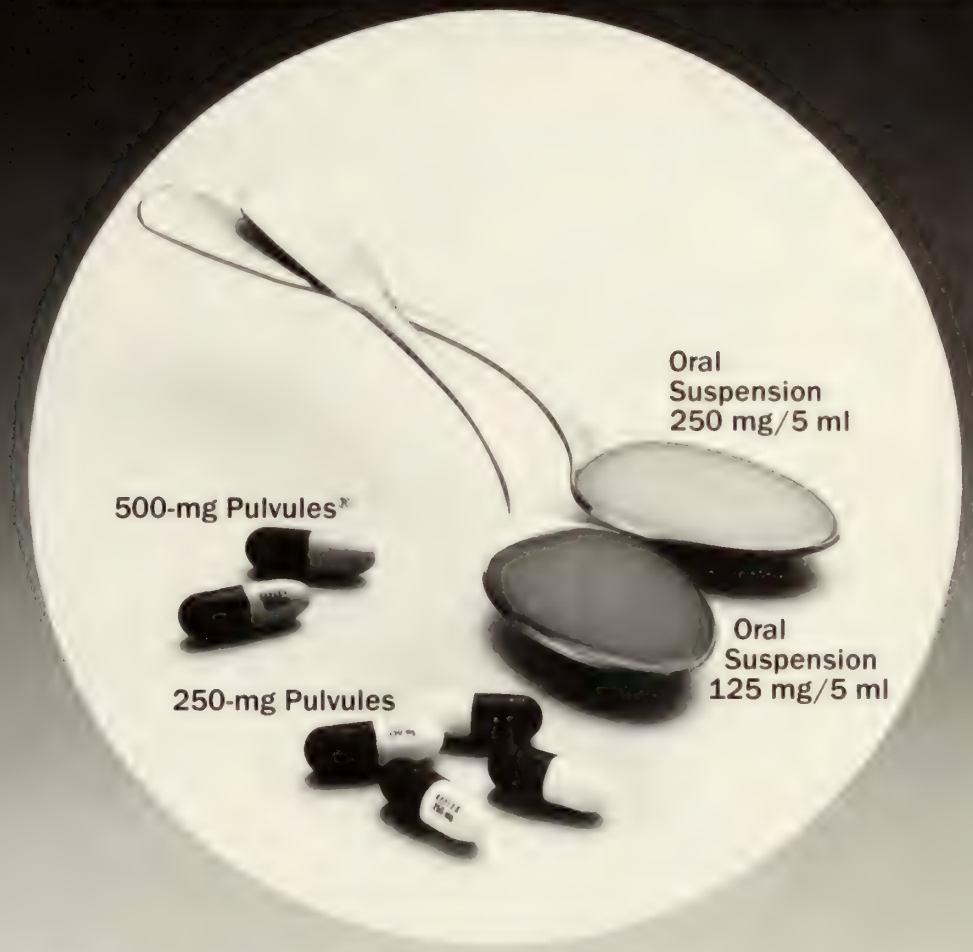
10 Practical Steps to a Healthier Life and Reduced Cancer Risks is the title of a new ACS pamphlet. The pamphlet, available from ACS units, outlines a common sense approach to protective factors and risk factors.

Nutrition and Cancer: Cause and Prevention. This is an ACS special report reprinted from *CA-A Cancer Journal for Clinicians* (34:2, 1984). It outlines information on cause and prevention that is based on information approved by the ACS's Medical and Scientific Committee and its Board of Directors in February 1984. The report is most useful in answering questions on nutrition and cancer.

1986 Cancer Facts & Figures: This annual statistical resource, offered by the ACS, is a must for all persons who deal with cancer patients and utilize statistical and scientific information in lay presentations.

Three video programs are available from the Oncology Nursing Society. The new programs are: Cancer Nursing Practice—An Overview; Cancer Prevention, Detection and Treatment; and Issues and Trends in Cancer Care—Major Cancers. This nursing core curriculum series, developed by the Oncology Nursing Society, is an excellent educational and review program that is available as a certification exam study guide. A syllabus is included with each series and CME hours are available when viewing each series and completing evaluation forms. For more information, write National Nursing Network, 250 W. 49th St., Suite 401, New York, N.Y. 10019.

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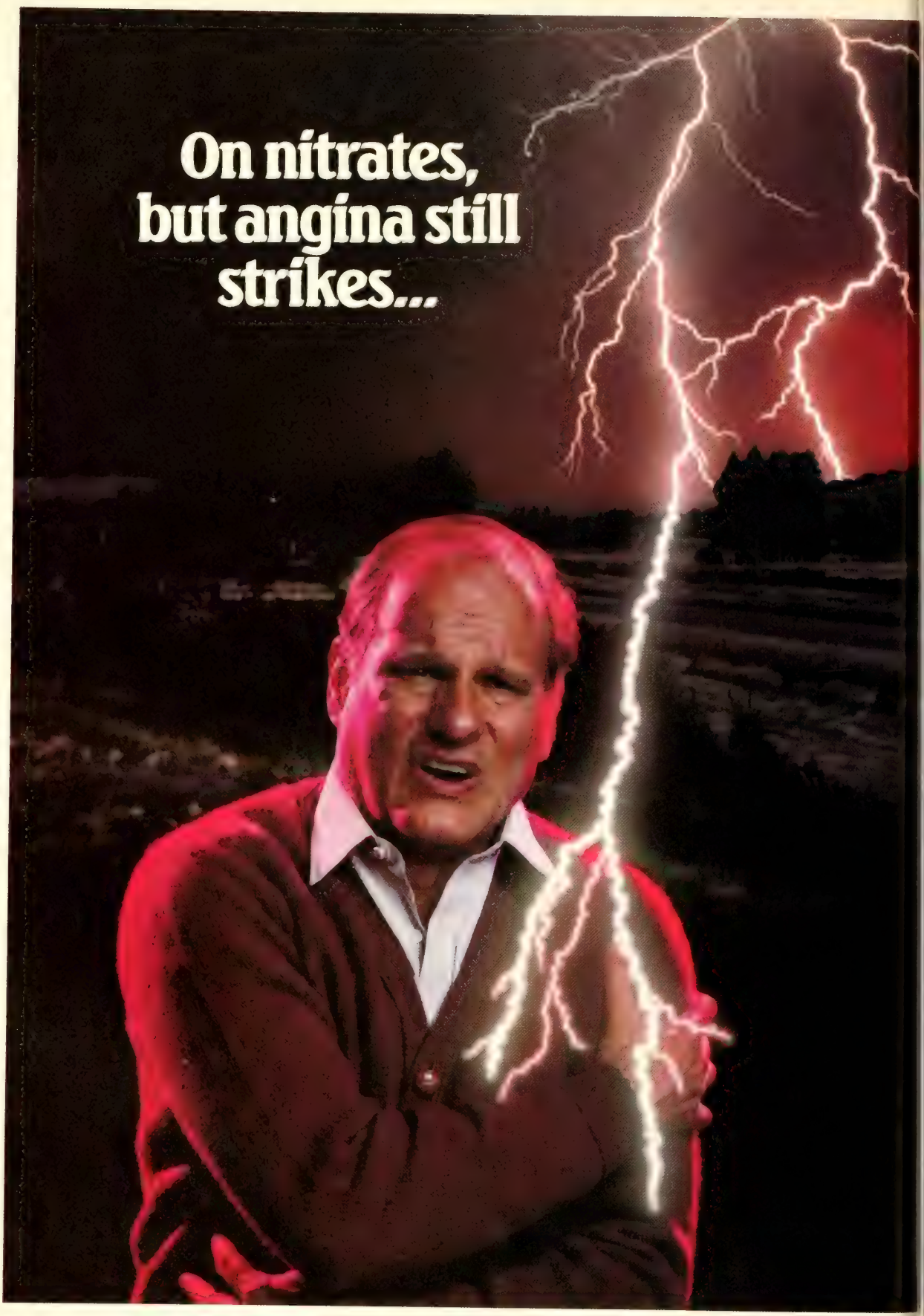
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Elevations of transaminases with and without concomitant elevations in alkaline phosphatase and bilirubin have been reported. Such elevations may disappear even with continued treatment; however, four cases of hepatocellular injury by verapamil have been proven by rechallenge. Periodic monitoring of liver function is prudent during verapamil therapy. Patients with atrial flutter or fibrillation and an accessory AV pathway (e.g. W-P-W or L-G-L syndromes) may develop increased antegrade conduction across the aberrant pathway bypassing the AV node, producing a very rapid ventricular response after receiving ISOPTIN (or digitalis). Treatment is usually D.C.-cardioversion, which has been used safely and effectively after ISOPTIN. Because of verapamil's effect on AV conduction and the SA node, 1° AV block and transient bradycardia may occur. High grade block, however, has been infrequently observed. Marked 1° or progressive 2° or 3° AV block requires a dosage reduction or, rarely, discontinuation and institution of appropriate therapy depending upon the clinical situation. Patients with hypertrophic cardiomyopathy (IHSS) received verapamil in doses up to 720 mg/day. It must be appreciated that this group of patients had a serious disease with a high mortality rate and that most were refractory or intolerant to propranolol. A variety of serious adverse effects were seen in this group of patients including sinus bradycardia, 2° AV block, sinus arrest, pulmonary edema and/or severe hypotension. Most adverse effects responded well to dose reduction and only rarely was verapamil discontinued. **Precautions:** ISOPTIN should be given cautiously to patients with impaired hepatic function (in severe dysfunction use about 30% of the normal dose) or impaired renal function, and patients should be monitored for abnormal prolongation of the PR interval or other signs of excessive pharmacologic effects. Studies in a small number of patients suggest that concomitant use of ISOPTIN and beta blockers may be beneficial in patients with chronic stable angina. Combined therapy can also have adverse effects on cardiac function. Therefore, until further studies are completed, ISOPTIN should be used alone, if possible. If combined therapy is used, close surveillance of vital signs and clinical status should be carried out. Combined therapy with ISOPTIN and propranolol should usually be avoided in patients with AV conduction abnormalities and/or depressed left ventricular function. Chronic ISOPTIN treatment increases serum digoxin levels by 50% to 70% during the first week of therapy, which can result in digitalis toxicity. The digoxin dose should be reduced when ISOPTIN is given, and the patients should be carefully monitored to avoid over- or under-digitalization. ISOPTIN may have an additive effect on lowering blood pressure in patients receiving oral antihypertensive agents. Disopyramide should not be given within 48 hours before or 24 hours after ISOPTIN administration. Until further data are obtained, combined ISOPTIN and quinidine therapy in patients with hypertrophic cardiomyopathy should probably be avoided, since significant hypotension may result. Clinical experience with the concomitant use of ISOPTIN and short- and long-acting nitrates suggest beneficial interaction without undesirable drug interactions. Adequate animal carcinogenicity studies have not been performed. One study in rats did not suggest a tumorigenic potential, and verapamil was not mutagenic in the Ames test. *Pregnancy Category C*: There are no adequate and well-controlled studies in pregnant women. This drug should be used during pregnancy, labor and delivery only if clearly needed. It is not known whether verapamil is excreted in breast milk; therefore, nursing should be discontinued during ISOPTIN use. **Adverse Reactions:** Hypotension (2.9%), peripheral edema (1.7%), AV block. 3rd degree (0.8%), bradycardia: HR < 50/min (1.1%), CHF or pulmonary edema (0.9%), dizziness (3.6%), headache (1.8%), fatigue (1.1%), constipation (6.3%), nausea (1.6%), elevations of liver enzymes have been reported. (See *Warnings.*) The following reactions, reported in less than 0.5%, occurred under circumstances where a causal relationship is not certain: ecchymosis, bruising, gynecomastia, psychotic symptoms, confusion, paresthesia, insomnia, somnolence, equilibrium disorder, blurred vision, syncope, muscle cramp, shakiness, claudication, hair loss, macules, spotty menstruation. **How Supplied:** ISOPTIN (verapamil HCl) is supplied in round, scored, film-coated tablets containing either 80 mg or 120 mg of verapamil hydrochloride and embossed with "ISOPTIN 80" or "ISOPTIN 120" on one side and with "KNOLL" on the reverse side. Revised August, 1984. 2385

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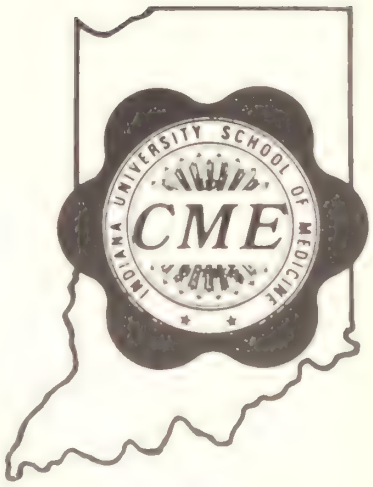
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Inflammatory Bowel Disease: A Pediatric Perspective

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THE NONSPECIFIC inflammatory bowel diseases (IBD), i.e., ulcerative colitis (UC) and Crohn's disease (CD), are being recognized with increasing frequency among children. Associated symptoms usually appear between 15-35 years of age and frequently before 20 years of age.[1,2] Symptoms may occur in the first years of life. There is no appreciable sex difference in either disease. A higher incidence of IBD exists among extended family members of index patients. IBD is more common among Caucasians, especially those of Jewish heritage.[3]

The etiology of IBD remains obscure but it likely involves the interaction of several factors including genetic influences, environmental agents and altered immunologic function. There are no specific data as yet to support a causative role for infection, diet or psychological factors, although two recent reports have again suggested an etiologic role for atypical mycobacteria in the pathogenesis of CD.[4,5]

Between 1967 and 1985, 220 children with IBD were evaluated at Riley Hospital for Children, Indiana University Medical Center. One hundred twenty patients were diagnosed with CD and 100 with UC. The age at the time of diagnosis ranged from 3 to 18 years, though most children were more than 9 years of age (*Figure 1*).

Description

UC is a chronic inflammatory disease of the colon manifested by diffuse mucosal ulceration, erythema and edema. The process is typically limited to the mucosa and, to a lesser extent, the submucosa. The disease involves the rectum in 95% of cases, and may extend in a contiguous pattern to the cecum. Histologically, there is a significant reduction in the number of goblet cells and foci of polymorphonuclear

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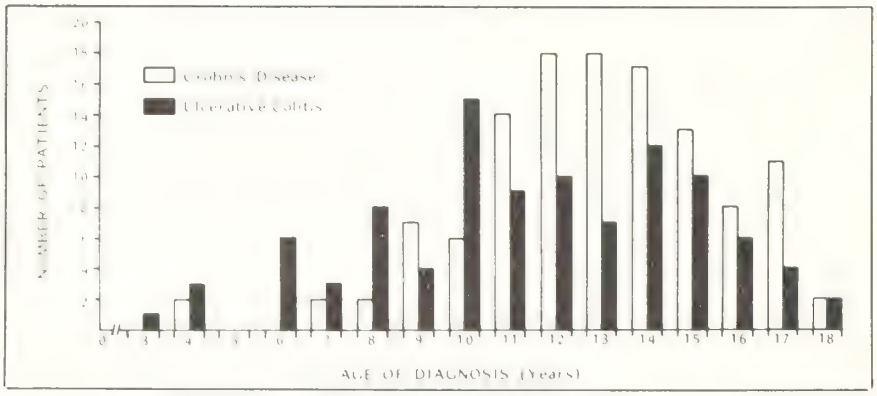


FIGURE 1: Age at diagnosis of 220 patients with inflammatory bowel disease. Most patients were diagnosed after age 9 and Crohn's disease predominated in patients under age 11.

leukocyte infiltrates which may also form epithelial crypt abscesses. Lymphocytes and plasma cells accumulate in the lamina propria.

CD is characterized by transmural inflammation that can occur discontinuously anywhere along the gastrointestinal tract. The inflammatory process often includes noncaseating granulomas which are only *rarely* (if ever) seen in UC. Gryboski and Spiro[6] noted that 20% of pediatric patients with CD had diffuse small bowel disease, 20% had ileal involvement only, 50% had ileocolitis and 10% had isolated colonic disease.

Clinical Manifestations

The cardinal symptoms of IBD are diarrhea, abdominal pain, weight loss, and fever (*Table*). Bloody diarrhea, often nocturnal, is the primary symptom of UC, whereas abdominal pain and weight loss predominate in CD. The presence of anal or perianal disease should alert the physician to consider IBD, especially CD. The typical Crohn's fissure is an indolent, wide based lesion with undermining of the edges. Oral lesions may occur with either type of IBD, and may precede symptomatic intestinal disease.[7] Extraintestinal manifestations include uveitis, pyoderma gangrenosa, erythema nodosum, arthritis, digital clubbing, liver disease, nephrolithiasis and growth retardation. In general, extraintestinal manifestations of IBD are more frequent in patients with colonic involvement.[8]

The association of IBD with hepatic abnormalities has been well established. Although clinical signs of liver disease are uncommon, it has been reported as the presenting symptom of IBD.[9,10] Pericholangitis is the most common hepatic abnormality associated with IBD. Other hepatic manifestations include chronic aggressive hepatitis, sclerosing cholangitis and macronodular cirrhosis.

Joint disease is the most common extraintestinal manifestation of IBD. It is usually pauciarticular and tends to affect the lower extremity joints. Arthritis usually occurs in conjunction with symptomatic intestinal disease, but there appears to be no association between arthritis and the severity of IBD activity.[11]

Nephrolithiasis has been reported in 4% of the patients with IBD. The incidence is slightly higher in CD, and the stones typically contain uric acid or calcium oxalate. In our experience, nephrolithiasis has developed more commonly in patients with UC, and the stones have frequently been composed of calcium phosphate.[12]

Growth failure can occur in children with either UC or CD but is much more common in the latter, especially as the presenting symptom. Chronic malnutrition is the most likely basis for growth failure. Contributing factors include decreased nutrient intake, increased nutrient requirements, increased nutrient losses and malabsorption.[13] With adequate nutrient supplementation and suppression of active disease, "catch-up" growth can be accomplished. Corticosteroid therapy, which suppresses normal growth when administered in high doses, has been a mainstay in the management of patients with IBD. "Catch-up" growth can occur as the dose of steroid is decreased and provided on an alternate

TABLE
Relative Frequency of Presenting Symptoms and Signs in Patients with Inflammatory Bowel Disease

Symptom	Crohn's Disease	Ulcerative Colitis
Diarrhea	+ + + +	+ + + + +
Hematochezia	+ +	+ + + + +
Abdominal Pain	+ + +	+ + + +
Weight Loss	+ + + +	+ +
Fever	+ +	+
Growth Failure	+ +	+
Oral Lesions	+	
Perianal Disease	+	
Arthritis	+	
Liver Disease		+

day schedule. It should be emphasized that growth failure is not an *a priori* indication for surgical resection nor is it a reason to withhold steroid therapy since disease suppression is needed for adequate growth.

Evaluation

Once a careful history and physical examination raises the suspicion of IBD, confirmation is dependent on laboratory, endoscopic and radiographic data. Initial laboratory studies include a complete blood count with platelet count, electrolytes (in patients with severe diarrhea), erythrocyte sedimentation rate (ESR) and protein electrophoresis. The platelet count and ESR are very sensitive indicators of intestinal inflammation and are often elevated before the patient develops overt intestinal symptoms. By quantitating the individual serum proteins electrophoretically, one can determine the serum albumin concentration, which will be low when there is intestinal protein loss, as well as the alpha$_1$ fraction, which is elevated with mild inflammation, and the gamma fraction, which is elevated in more severe and chronic inflammation.

The stool is examined for ova and parasites, and cultured for Yersinia, Salmonella, Shigella and Campylobacter in cases with acute onset and symptoms less than three weeks duration. Microscopic examination of a rectal smear is useful in demonstrating the presence of polymorphonuclear leukocytes or possibly amoeba. *Entamoeba histolytica* should be definitely ruled out prior to instituting steroid therapy. Reticulocyte count and iron studies are obtained in patients with anemia. Patients with ileal CD may have a mixed anemia secondary to chronic disease, iron deficiency, vitamin B_{12} and/or folate deficiency. Hepatic aminotransferases, gamma glutamyl transpeptidase and fractionated bilirubin are obtained to rule out asymptomatic liver disease.

Lower gastrointestinal endoscopy is the next step in the evaluation since the rectosigmoid colon is abnormal in 95% of the patients with UC and 40-50% of those with CD. Hypertonic enemas can produce minor mucosal alterations which are indistinguishable from mild colitis; therefore, initial proctosigmoidoscopy should be accomplished without prior preparation. To obtain a complete examination of the colon by colonscopy, it may be necessary to restrict the diet to clear liquids only and gently purge the colon with isotonic enemas prior to the procedure. Stool samples for culture and microscopic examination, as well as mucosal biopsies, are obtained during the procedure.

The endoscopic findings of UC are diffuse edema, erythema, punctate ulcerations and mucosal friability. The vascular pattern is blurred or absent in acute disease, whereas long-standing disease results in a prominent vascular pattern. Pseudopolyps, which are accumulations of granulation tissue and/or mounds of undermined mucosa, may be seen in the chronic stages of both types of IBD; they are uncommon in pediatric patients.

The endoscopic features of CD may be similar to ulcerative colitis, but are often patchy or discontinuous. Deep, broad, serpiginous ulcerations may be seen producing a "cobblestone" appearance.[14] Mucosal biopsies should always be obtained in search of noncaseating granulomas, common in CD.

Contrast radiographic studies of the upper gastrointestinal tract and small intestine are always included in the initial evaluation of suspected cases of IBD. These should include either a high volume small bowel study or an enteroclysis examination (*Figures 2 and 3*). Barium studies should be delayed in patients with acute colitis of moderate or greater severity to avoid precipitating toxic megacolon or causing colonic perforation. Widespread availability of colonoscopy has all but eliminated the need for the barium enema in the evaluation of colon involvement. Colonoscopy is performed before contrast radiographic studies since barium may alter the mucosal appearance. Abdominal CT scanning may have a place in the evaluation of patients with CD. It allows assessment of bowel wall thickness, mesenteric involvement, lymphadenopathy and the presence of fistulae, especially during acute inflammation when fistulae may not be visualized with barium studies.[15]

Treatment

The goal of medical therapy is to suppress and control the active component of the disease. Many patients with mild IBD can be controlled with sulfasalazine alone. Sulfasalazine is an azo-bonded combination of sulfapyridine and 5-aminosalicylate. The bond between the two compounds is broken by intestinal bacteria, releasing free 5-aminosalicylate which appears to be the effective component in suppressing the inflammation, though the mechanism of effective action has not been finally determined.[16] The dose of sulfasalazine is maintained at 50-75 mg/kg/day (maximum 4 gms/day), given in divided doses to minimize untoward side effects. Adverse reactions to sulfasalazine include headache, hemolytic anemia and impaired folate absorption *in vitro*. The side effects appear to be due to the sulfapyridine moiety; therefore, the efficacy of 5-aminosalicylate bonded to different carrier molecules is currently being evaluated. Sulfasalazine has been found effective in mild UC and active ileocolonic and colonic CD. It has also been found effective in maintaining remission in UC. In contrast, the National Cooperative Crohn's Disease Study failed to show that sulfasalazine prevented a recurrence of active CD.[17]

Corticosteroids remain the mainstay of anti-inflammatory therapy. Prednisone is prescribed at a dose of 2 mg/kg/day (maximum dose 60 mg/day) as a single daily dose. In severe cases, a divided dose regimen may be used for two to four weeks before initiating a single daily dose schedule. Steroid retention enemas and foams have



FIGURE 2: Air contrast barium radiograph of the transverse colon of a patient with ulcerative colitis, demonstrating a coarse mucosal pattern with multiple small ulcerations.



FIGURE 3: Barium radiographic study of a patient with Crohn's disease, demonstrating ulcerations in the terminal ileum and cecum, and narrowing of the terminal ileum.

limited usefulness but appear beneficial in the management of left colon/rectal disease.

Occasionally, patients with severe IBD require hospitalization for total parenteral nutrition, and correction of profound anemia, hypoproteinemia and hypokalemia. These patients receive intravenous hydrocortisone in a dosage of 2 mg/kg every six hours.

The most serious complication of UC is toxic megacolon, when the inflammation extends through all layers of the colon, interfering with normal colonic motility. The inflamed colon becomes very fragile and distended with air; the risk of perforation is great. The intestinal tract is decompressed with nasogastric suction, and broad antibiotic coverage must be provided in addition to the steroid therapy.

Renewed interest in immunosuppressive agents such as azathioprine and its active metabolite, 6-mercaptopurine (6-MP) has resulted from recent reports indicating a beneficial effect of 6-MP alone and in conjunction with steroid therapy in patients with severe CD.[18,19] The mode of action of these immunosuppressive drugs in these disease conditions is unknown although their steroid sparing effects have been long appreciated. Suppression of lymphocyte migration as well as cytotoxicity has been proposed. We have prescribed 6-MP (1.5 mg/kg/day) in a limited number of patients with severe CD who previously required high dose prednisone to control their symptoms. We believe that it has been beneficial, and are, therefore, cautiously optimistic about its role in the future management of IBD.

Perianal disease is treated with sitz baths and a combination antimicrobial-steroid topical ointment. Metronidazole (20 mg/kg/day) has also been shown to be effective in treating the perianal disease of CD, but recurrences are common once the medication is discontinued.[20,21] A recent report has also suggested benefit from 6-MP in the management of severe perianal CD.[19]

During the initial treatment period, we evaluate the patients every two-four weeks and alter the therapeutic regimen when all parameters indicate disease suppression. Patients receiving prednisone on a daily basis for four to six weeks are changed to an alternate day program if there is evidence of complete disease suppression, as demonstrated by adequate weight gain, hemoccult-negative stools and normal laboratory parameters. The prednisone is decreased by 5 mg every four to six weeks. When a dose of 20 mg every other day is reached, sulfasalazine is added to the program with the hope that the prednisone can eventually be discontinued and suppression maintained with sulfasalazine. Low dose sulfasalazine is continued indefinitely. Patients treated with daily prednisone who do not have evidence of complete disease suppression after four to six weeks of therapy are maintained on daily prednisone. The dose is decreased by 5 mg every two to four weeks depending on the completeness of their response to therapy. When a daily dose of 15 mg is reached, alternate day therapy is instituted, using

20 mg of prednisone every other day, and sulfasalazine is added to the management program. A recrudescence is managed by reinstituting daily steroid therapy at a higher level. Some patients require low dose prednisone indefinitely to maintain disease suppression.

The role of dietary management in IBD is open to debate. Clearly, many patients with IBD are malnourished (especially those with CD) and require increased calories and protein. Occasionally, total parenteral nutrition is required. A severely restrictive diet is usually unpalatable and often eliminates favorite food items.

The many reports of hypolactasia in UC have led us to restrict milk consumption in these patients until they are free of diarrhea. Breath hydrogen analysis has become a useful tool for identifying patients who fail to absorb lactose completely and should have lactose temporarily eliminated from their diet.[22] We also initially institute a low residue, nonirritating diet since common sense would suggest that some foods, e.g., popcorn, peanuts, corn chips, etc. may interfere with the healing process. We discuss the rationale for these restrictions honestly with each patient and reassure them that the restrictions are temporary and will be released when there is evidence of disease suppression. Later, the patients are allowed to control their own diet, avoiding foods that produce symptoms. Calcium supplementation must be given when patients are restricted from milk and dairy products for an extended period of time. A daily multivitamin (with folate) is recommended and hematinics are prescribed as necessary. Antispasmotics such as Donnatal® or Imodium® are helpful in relieving abdominal pain.

When patients with UC have a recurrence of symptoms, proctosigmoidoscopy or colonoscopy is repeated to determine the extent of disease. A contrast radiographic study of the colon is obtained after five years to look for evidence of colonic narrowing. It should be emphasized that the risk of colorectal cancer in patients with UC is not as high as previously stated (10-20% for every decade of disease after 10 years). In one study the risk was found to be 11.4% at 32 years after diagnosis.[23] Colonoscopy with multiple biopsies can be routinely performed to discover dysplastic mucosal changes. Routine colectomy based on disease duration can no longer be recommended. When UC is recalcitrant to aggressive medical management, we recommend total intra-abdominal colectomy with preservation of the rectal muscle sheath as part of an endorectal pull-through procedure.[24] The completed operation, which is staged, allows preservation of normal bowel function with anal continence, although the patients do have an increased stool frequency.

Approximately 75 to 80% of patients with CD will eventually require a surgical procedure for obstruction, fistulae formation or abscess within 20 years of onset of symptoms.[25] Elective surgery is generally avoided due to the high recurrence rate although the risk of recurrence varies with disease location.[26]

Summary

IBD is recognized with increasing frequency in the pediatric population. The most common presenting symptoms are fever, weight loss, diarrhea and abdominal pain. Many patients present with extra-intestinal manifestations exclusively, which delays proper diagnosis. The diagnosis of IBD is confirmed by utilizing appropriate laboratory, radiographic, endoscopic and pathologic investigations. Management is challenging and recurrence of disease activity should be anticipated. Optimal care depends on aggressive medical therapy directed at complete suppression of disease activity and the provision of emotional support to the patient and family.

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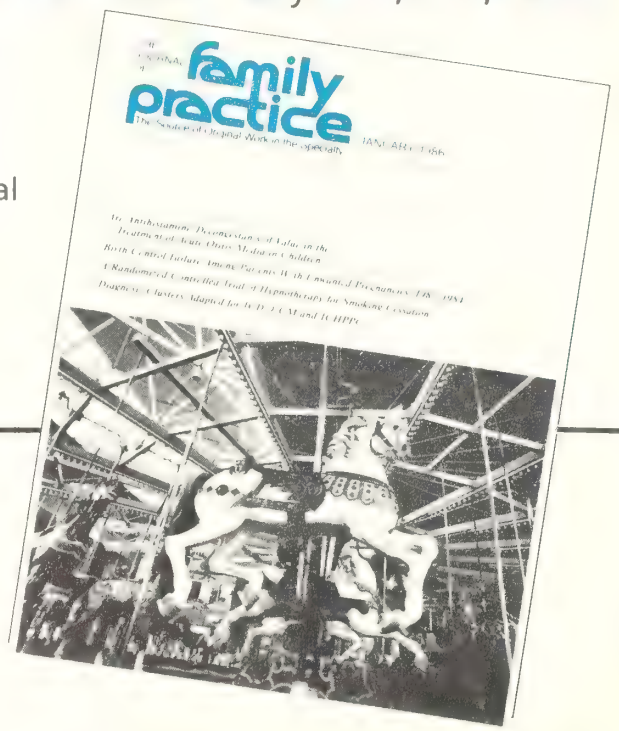
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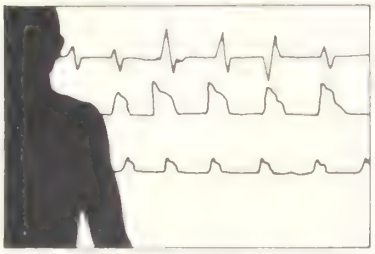
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Can Fiberoptic Bronchoscopy Reverse Acute Lobar Atelectasis?



ADULT CRITICAL CARE MEDICINE

The Author Says Some Physicians Think Fiberoptic Bronchoscopy Is the Treatment of Choice for Atelectasis, While Others Say It Is Never Indicated; Still Others Are Looking for Evidence . . .

DEBRA J. MYERS, M.D.
Indianapolis

PULMONARY COMPLICATIONS due to atelectasis may increase the morbidity of post-operative patients and patients hospitalized for serious non-surgical conditions. As many as 70% of patients undergoing abdominal or thoracic surgery experience some degree of atelectasis.[1] In addition to surgery, risk factors for atelectasis include smoking, obesity, prolonged duration of anesthesia, chronic obstructive pulmonary disease and upper respiratory infections.

Because atelectasis is most often due to ventilation at low lung volumes and the subsequent closure of small airways, methods of treatment which increase lung volume are usually preferred, although a clear consensus on which forms of therapy are most beneficial does not exist. The use of one such treatment, fiberoptic bronchoscopy, will be discussed here.

Flexible fiberoptic bronchoscopy became available in the mid-1970s as a relatively non-traumatic method to quickly assess and treat atelectasis. The high frequency of acute lobar atelectasis among hospitalized patients rapidly indicated that guidelines for patient selection would be highly desirable so as to assure appropriate utilization of this technique. Some physicians believe fiberoptic bronchoscopy is the treatment of choice for atelectasis. Some believe it is never indicated. Others search valiantly for objective evidence to identify the therapeutic role of fiberoptic bronchoscopy. In addition to treatment efficacy, a major issue within this exploration is the disparity in costs, both financial and physical, between bronchoscopy and other treatment methods.

The absence of well-designed clinical studies examining the treatment of atelectasis has led to numerous case reports and series of empiric observations. Some authors, such as Lewis,[1] try to develop guidelines for clinical management and without supporting data assert that bronchoscopy is rarely indicated for acute atelectasis. Therefore, we clinicians must be able to critically evaluate the literature and use medical judgment to assess its relevance for our individual patients.

The often cited prospective study by Marini[2] was a unique attempt to analyze, in a randomized fashion, the clinical outcome of patients treated with respiratory therapy maneuvers preceded by, without, or with delayed flexible fiberoptic bronchoscopy. Fourteen patients received initial bronchoscopy. Seventeen patients received respiratory therapy treatment for the first 24 hours. The authors concluded that fiberoptic bronchoscopy did not have more benefit than respiratory therapy in the treatment of acute lobar atelectasis, and that the presence of an air bronchogram on chest x-ray predicted delayed resolution of collapse despite the form of treatment used.

The Marini study has, therefore, been used by some to deny a role for fiberoptic bronchoscopy in the treatment of acute lobar atelectasis. I believe this is an inappropriate use of the data presented in the study. Several clinical issues make the Marini data not applicable to many patients with acute lobar atelectasis. The hemodynamic stability, arterial blood

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FIGURE 1: Chest radiograph showing right lower lobe atelectasis.



FIGURE 2: Chest radiograph from the same patient following fiberoptic bronchoscopy showing resolution of atelectasis.

gas results, or respiratory status of the patients were not stated. We also are unable to determine if the two groups are comparable in age, neuromuscular function, or ability to cooperate with respiratory therapy treatments.

We do know that the groups are not comparable in one major way. Eight of the 14 patients undergoing initial bronchoscopy were already intubated. Only four of the 17 patients receiving respiratory therapy treatment for the first 24 hours were intubated. The Marini data were reviewed by Friedman[3] who believed the data demonstrated a slightly better result in intubated patients who were bronchoscoped and definite superiority in nonintubated patients with atelectasis.

In addition, eight of the 17 patients receiving respiratory therapy for the first 24 hours had 50% or less improvement in atelectasis and were treated with "delayed" fiberoptic bronchoscopy. Thus, Marini's conclusion that fiberoptic bronchoscopy should not be used in patients suffering from cardiopulmonary distress due to atelectasis has been questioned. Those data should not be used, therefore, to deny potentially helpful therapy for patients in whom prompt resolution of atelectasis would avoid intubation and mechanical ventilation.

A recent survey and an editorial regarding the treatment of postoperative atelectasis emphasized the need for further prospective studies to evaluate the treatment of clinically significant atelectasis.[4,5] The author made a strong case for separating treatment modalities for clinically significant degrees of atelectasis from "prophylactic" measures used in cases in which atelectasis is transient by natural history and of no clinical consequence. I believe this separation should be made by practicing clinicians as well. The following case illustrates the potential utility of fiberoptic bronchoscopy as treatment for atelectasis in an unstable patient.

A 75-year-old woman suffered acute respiratory failure and cardiopulmonary arrest. She was resuscitated and her trachea was intubated before her arrival in the emergency room. The initial chest x-ray showed the endotracheal tube to be in the right mainstem bronchus. Correct tube placement was achieved and the patient was transferred to the intensive care unit. Right middle and lower lobe infiltrates, fever and leucocytosis responded to antibiotic therapy for presumed aspiration pneumonia. The patient was successfully weaned from mechanical ventilation and her trachea was extubated nine days after admission. Aerosol bronchodilator treatments were administered every four hours and the patient was encouraged to cough and breathe deeply.

Two days later, she developed acute respiratory distress and hypoxemia. Right lower and middle lobe atelectasis was demonstrated by physical exam and chest x-ray. The patient was treated with oxygen and received a bronchodilator solution given by IPPB every two hours. Volumes achieved with IPPB were 1,000 ml or greater. Despite vigorous respiratory therapy treatment and the addition of chest physiotherapy and postural drainage, the chest radiograph remained unchanged and the patient became more distressed over the subsequent 48 hours.

On the 14th hospital day, flexible fiberoptic bronchoscopy was performed for the treatment of clinically

significant atelectasis (*Fig. 1*). During fiberoptic bronchoscopy, copious tenacious mucopurulent secretions were removed from the right middle and lower lobes. After bronchoscopy, the respiratory distress and hypoxemia resolved. The chest x-ray demonstrated immediate improvement (*Fig. 2*). Respiratory therapy treatments were continued every four hours.

Four days later, the patient again developed acute respiratory distress and hypoxemia. The physical exam and x-ray revealed left lower lobe atelectasis. The patient was treated with oxygen, and IPPB followed by chest physiotherapy were administered every two hours. Fiberoptic bronchoscopy was performed because the patient continued to deteriorate over the subsequent eight hours. During bronchoscopy thick, tenacious secretions were encountered at the orifice of the left lower lobe. The removal of the secretions required frequent saline lavage and forceps retrieval of more solid mucopurulent plugs. Again the patient promptly improved by clinical, arterial blood ages and x-ray criteria. Gram stain and culture of the secretions revealed minimal inflammation and no pathogen was isolated. Respiratory therapy treatments were continued every four hours for 36 hours. The remainder of the hospital course was unremarkable and the patient was discharged in good condition.

It is quite apparent that delay in or denial of fiberoptic bronchoscopy may have required re-intubation of this patient, prolonged the hospitalization, and caused unnecessary morbidity.

In summary, guidelines for treatment of acute lobar atelectasis by fiberoptic bronchoscopy compared with other methods are not supported by clinical data. Each patient's clinical status must be critically assessed, and the treatment offered must be appropriate for the individual patient. Stable patients with clinically insignificant atelectasis, or intubated patients who are receiving adequate tracheobronchial suctioning and mechanical ventilation, may indeed be more cost effectively treated with conservative respiratory therapy maneuvers. However, unstable patients or non intubated patients who cannot cooperate with respiratory treatments should not suffer unnecessary morbidity and perhaps mortality due to the injudicious denial of acute fiberoptic bronchoscopy.

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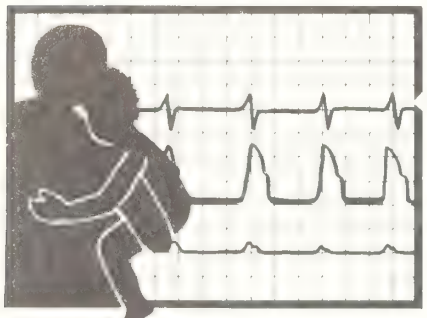
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Neonatal Hyperbilirubinemia: A Re-evaluation



PEDIATRIC CRITICAL CARE MEDICINE

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SEVERAL RECENT commentaries have raised serious questions about our understanding of the relationship between bilirubin and brain damage[1,2] as well as about our arbitrary use of a serum bilirubin concentration of 20 mg/dl as an indication for an exchange transfusion.[3] This article will review some of the studies which have led to the present assumptions, as well as studies that refute many of the clinical "truths" about jaundice.

Bilirubin is known to cause the pathologic entity of kernicterus. At autopsy, the pathognomonic finding is yellow staining of certain areas of the brain. More recently, kernicterus has been applied to a clinical syndrome seen in term infants with refusal to feed, high pitched cry, hypertonicity and opisthotonus. Survivors usually develop sequelae, particularly cerebral palsy with athetosis, hearing loss, paralysis of upward gaze and dental dysplasia.[4]

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Evidence strongly implicates bilirubin as the toxic substance causing neural damage, but bilirubin could simply be a colorful marker of some other damaging event. For example, recent experimental manipulation of the blood-brain barrier in rats by Levine[5] suggests that breakdown of this barrier is the critical event. If true, then serum levels of bilirubin, bound or unbound, would not be the most significant factor in deciding about an exchange transfusion. In addition, the diagnosis of kernicterus at autopsy is often quite difficult to make and is probably made too frequently. Turkel, *et al*[6] recently noted that gross bilirubin staining of the brain without specific microscopic changes is not the same clinicopathologic entity as the kernicterus seen with posticteric encephalopathy.

Is 20 mg/dl the Critical Level at Which an Exchange Transfusion Is Indicated?

In premature infants, kernicterus is not usually related to Rh or other isoimmunization and the true incidence of kernicterus in these infants is unknown. No studies presently exist which establish risk levels for smaller preterm infants and all of our present guidelines "have not been validated."[7] It is certainly possible that an exchange transfusion performed on a preterm infant at a bilirubin level of 10 mg/dl would be no more effective than one performed at a level of 20 mg/dl.[1] This might well be true if kernicterus results from the opening of the blood-brain barrier.

What of the recommendations that 20 mg/dl is the critical level at which an exchange transfusion is indicated? The often-quoted retrospective study published by Hsia and associates[8] in 1952 found that 18% of Rh sensitized infants with bilirubin concentrations between 16 and 30 mg/dl developed kernicterus, compared to 50% when bilirubin levels were greater than 30 mg/dl. They recommended keeping bilirubin levels below 20 mg/dl to try to prevent kernicterus and had no subsequent cases of this disease in more than 200 consecutive cases of Rh hemolytic disease using this policy. That study confirmed the previously published findings of Mollison and Cutbush[9] (1951) that found no kernicterus in babies with Rh hemolytic disease when the peak bilirubin did not exceed 18 mg/dl.

Subsequently, without supporting evidence, a level of 20 mg/dl for exchange transfusion was applied to full-term infants with jaundice but without hemolytic disease. Several other studies have addressed the question of the risk of kernicterus in the term infant without hemolytic disease.[10,11,12] Results of these studies have shown no evidence of kernicterus or other neurologic damage in a large number of infants whose peak bilirubin level reached as high as 25-30 mg/dl, with some levels actually exceeding 30!

Gellis even commented on this issue in the 1962 Year Book of Pediatrics.[13] He stated: "At the time of writing the indications for exchange transfusion for nonhemolytic hyperbilirubinemia are not at all clear and universally accepted. Thus, we would at present refrain from treating any full-term infant with exchange transfusion regardless of degree of hyperbilirubinemia once we had excluded excessive hemolysis due to erythroblastosis, sepsis, etc., as its cause. We feel that the risk of exchange transfusion is far greater than the risk of kernicterus in the full-term infant." The facts supporting his statement have not changed.

In addition to not having adequate data to decide the level of bilirubin at which an exchange transfusion is indicated for the preterm infant or the term infant without hemolysis, a recent study by Schreiner and Glick[14] suggests many labs cannot even measure bilirubin accurately. They found that the results for an 18.1 mg/dl bilirubin concentration standard ranged from 10.9 to 24 mg/dl. Such variation in measurements of serum bilirubin could result in markedly different treatment of a jaundiced baby at one hospital compared to another if a bilirubin concentration of 20 mg/dl was rigidly adhered to as the level at which to perform an exchange. This interlaboratory variation should make the clinician more hesitant to rush and do an exchange transfusion based on a single bilirubin value over 20 mg/dl.

With this lack of data correlating brain damage with a specific bilirubin level, the routine use of phototherapy for healthy, term neonates with indirect bilirubin levels above 15 mg/dl must also be questioned. Hein points out in a recent Letter to the Editor[15] that in Sweden phototherapy is not initiated for the normal term newborn until the bilirubin exceeds 20 mg/dl. There is no evidence to suggest that this approach has led to any increase in kernicterus in that country. In that same correspondence he projected for the United States an annual cost of over $1 million to hospitalize a population of healthy newborns for an additional 3.3 days, solely for phototherapy initiated at an indirect level of 15 mg/dl and continued until the level has fallen to 12 mg/dl or less.

In light of the existing data, what can be said about the treatment of hyperbilirubinemia? Clearly, we do not have enough knowledge to determine a critical level of bilirubin for exchange transfusion for the otherwise healthy term newborns without hemolysis, and levels as high as 25 mg/dl have been reported to produce no neurologic damage in this group of infants. As Lucey so aptly states:[2] "There is no 'level,' there probably never was 'a level,' nor will there be 'a level.'" Phototherapy for these babies is probably not routinely indicated until the bilirubin rises above 16-18 mg/dl. On the other hand, babies with hyperbilirubinemia due to hemolysis should probably still be exchanged for a bilirubin in excess of about 20 mg/dl. In addition, very low birth weight infants (less than 1500 grams, or about 3 pounds 5 ounces) should probably receive phototherapy either prophylactically soon after birth[16] or as soon as the bilirubin reaches 5 mg/dl.[17] The aggressive approach to the low birth weight baby is based upon the unknown risks of low levels of bilirubin in these neonates as well as excessive morbidity and mortality observed during exchange transfusions performed on these babies.[16]

Use of these recommendations should limit the number of exchange transfusions for most healthy term infants with jaundice and should significantly reduce the use of phototherapy for these same infants. Hopefully, studies in the future will allow a more scientific approach to this problem of neonatal hyperbilirubinemia and will eliminate our vigintiphobia ("fear of twenty").[3]

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A Review of Tumor Associated Markers for Small Cell Anaplastic Lung Cancer

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LUNG CANCER, which ranks first among the causes of cancer deaths in males, is expected to overtake breast cancer as the major cause of cancer deaths in women in 1986. In order to help offset this dramatic cancer incidence for men and women, an extensive search for a serum marker for human lung cancer continues.[1]

Substances being evaluated as potential markers include carbohydrates,[2,4] ectopically produced hormones,[2,4] amylase,[2] alpha-1 antitrypsin,[2,5] serum copper,[6,7] serum zinc,[7] aldolase,[8] B_2-microglobulin,[9] lactate dehydrogenase,[2,6] neurophysins,[2,10] carcinoembryonic antigen (CEA),[3,11,12] and creatine kinase.[2,13,14,15]

Many of these compounds have demonstrated a relatively high sensitivity but generally have lacked high degrees of specificity. For example, Martin *et al*[6] examined 26 patients with primary lung cancer and found a significant increase in the levels of copper, ceruloplasmin, LDH and alpha-2-globulins. Likewise, Mordessini *et al*[8] evaluated B-2 microglobulins by radioimmunoassay in 51 lung cancer patients and compared these levels with concomitant carcinoembryonic and alpha-fetoprotein levels. Results demonstrated an increase in B_2-microglobulin levels as the clinical state of the disease progressed and demonstrated an inverse relationship between survival time and B_2-microglobulin levels. An increased CEA or B_2-microglobulin level was determined in 48% of the patients. Alphafetoprotein was found elevated in only one of the patients examined.

Of the four major types of lung cancer, adenocarcinoma, squamous cell carcinoma, large cell undifferentiated carcinoma, and small cell anaplastic carcinoma (SCAC), the majority of work has been done on SCAC due to the relative severity of this particular type of lung cancer and its unique biochemistry. Small cell anaplastic carcinoma apparently arises from neural crest cells. The neural crest cells primarily form a temporary embryonic structure that develops along the neural fold during embryonic development. Neural crest cells then form four distinct tissue types which include afferent nerves to both brain and spinal cord, melanocytes, and the medulla of the adrenal gland with its associated endocrine structures.[2] However, these cells also are scattered throughout the body in a variety of tissue and organs, including the lung, where SCAC arises.[16]

Small cell anaplastic carcinoma accounts for approximately 15-20% of all lung cancers and is the most aggressive of the malignant pulmonary tumors. Small cell anaplastic carcinoma has been found most frequently in middle-aged men and is strongly associated with smoking.[17] Some occupational groups such as uranium miners,[18] and chloromethyl methyl ether workers have an unusually high incidence[19] of this tumor.

The SCAC tumors are typically rapidly growing lesions that involve hilar and mediastinal lymph nodes early in the course of disease, with widespread dissemination usually present at the time of diagnosis. Histologically the cells are small and fragile with dense nuclei that tend to be surrounded by very little cytoplasm. Electron microscopy often demonstrates areas of prominent desmosomes and keratin formation, with neurosecretory granules generally present.[20] Biochemically, SCAC commonly produces hormones and other bioactive substances. Such activity is to be expected based upon the apparent neural crest embryonic origin of this tumor tissue. For example, these tumors are capable of decarboxylating certain amino acids to synthesize amines as well as provide for their storage.[2]

The most routinely measured bioactive substance currently known to be produced by SCAC appears to be creatine kinase (CK). Creatine kinase serum levels are elevated by a variety of clinical disorders including polymyositis, muscular dystrophy, crush injury, myocardial infarction, delirium tremens, cerebral infarction, encephalitis, bacterial meningitis, tetany, hypothyroidism and malignancy. Current literature provides several case studies and small series demonstrating the association of CK-BB isoenzyme with SCAC.[13,14]

Creatine kinase (E.C. 2.7.3.1) consists of two distinct monomeric forms designated M (Muscle) and B (Brain). These monomers combine to form three dimers identified as MM, MB and BB. The MM form predominates in somatic muscle, MB in cardiac muscle and BB in the brain as well as a variety

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of other tissues.[21] In human serum, a low activity of CK-BB can be measured routinely by the most sensitive of methods. However, by most commonly employed, clinical laboratory analytic procedures, CK-BB is seldom seen.

Gasdar *et al*[15] evaluated four patients with non-diagnostic chest x-rays but widespread SCAC with the subsequent diagnosis of SCAC made on the basis of elevated CK-BB levels. In addition, SCAC cell lines have been maintained *in vitro*. These cultures demonstrate synthesis of a variety of bioactive substances, including abnormally high levels of CK-BB.[15]

Many laboratories (including that of the authors) are currently evaluating the presence of CK-BB in the serum of patients with lung cancer, in particular SCAC. These studies, combined with patient follow-up and clinical correlation should provide valuable information with which to determine the role of serum CK-BB testing in lung cancer diagnosis and follow-up.

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Cerebral Cysticercosis

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Abstract

The frequency of the diagnosis of cerebral cysticercosis has been increasing in the United States, most likely as a result of the widespread availability of computed tomography (CT), as well as the increased influx of immigrants from endemic areas. The symptomatology depends on the number, extension, and topographic location of lesions. Treatment for the infection has been limited to seizure control or shunting procedures to relieve intracranial hypertension; however, a new drug, praziquantel, represents a major new advance in the treatment of cerebral cysticercosis. The purpose of this article is to add a new case to literature and to increase awareness of this clinicopathologic entity.

Key words: Cerebral cysticercosis; Taenia solium; Pork tapeworm; CT scan; Praziquantel.

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Cysticercosis is the disease caused by the presence in human tissue of the encysted larva of the tapeworm Taenia solium. It is the most common parasitosis affecting the central nervous system (CNS) and is endemic in many developing countries.[1] Although in the United States cysticercosis is rare, some cases have been recognized. Almost all were immigrants from endemic areas or residents with extensive travel abroad; only a few did not travel outside the United States.[2-4] We report an additional case of cerebral cysticercosis in an Indiana native who never traveled abroad.

Case Report

A 30-year-old black man was admitted to the hospital because of a seizure. The patient was a native of Gary, Indiana who had never traveled outside of Indiana.

On the day of admission, he was involved in an auto accident and was found to have an atypical seizure disorder. He was brought to the hospital for evaluation. His vital signs were normal.

Neurological examination revealed nothing significant. CT scan of the head demonstrated a localized area of low density in the left parietal lobe, measuring 2 cm in diameter. There was evidence of some contrast enhancement within the peripheral portion of the low-density area (*Fig. 1*).

Laboratory work-up revealed a normal hemogram with a normal total white count and differential. The chemistry admission profile was unremarkable except for a marked elevation of creatine kinase (CK) with a normal activity of CK-MB. This high enzyme activity was felt to be related to his seizure disorder and muscle injury sustained from the automobile accident.

The patient underwent a craniotomy. A well circumscribed 1 cm cystic lesion was removed. Microscopic examination revealed a larval cyst with rostellar hooks, characteristics of Taenia solium (*Figure 2*). Little inflammatory response was found surrounding the cyst.

The patient had an uneventful postoperative hospital stay and was discharged home. Stool examination for ova and parasites was not done.

Discussion

There have been two major advances concerning cerebral cysticercosis. One is the increased availability of CT scanning, which has contributed to a more accurate diagnosis and to a better understanding of the pathophysiology of cysticercosis. The other is the development and experimental use of the chemotherapeutic agents praziquantel in the treatment of cysticercosis.

Life cycle: The adult worm in the human host is a ribbon-like array of proglittids with anterior scolex containing suckers and hooklets which fasten to the wall of the small intestine. Proglottids, eggs, or both, are discharged in the feces. If ingested by swine, the eggs hatch in the small intestine, releasing larva which burrow into venules, and are carried to distant sites, usually the muscles and brain, where they mature as cysticerci after 60 to 70 days. In the usual cycle only the pigs harbor the larval stage of T solium, and human beings acquire the adult tapeworm by eating undercooked pork. However, people can also become infected with the cysticerci, or larval stage, by accidental ingestion of tapeworm eggs or regurgitation of eggs or proglittids in a person harboring the adult worms. Thus, humans can serve as both definitive and inter-

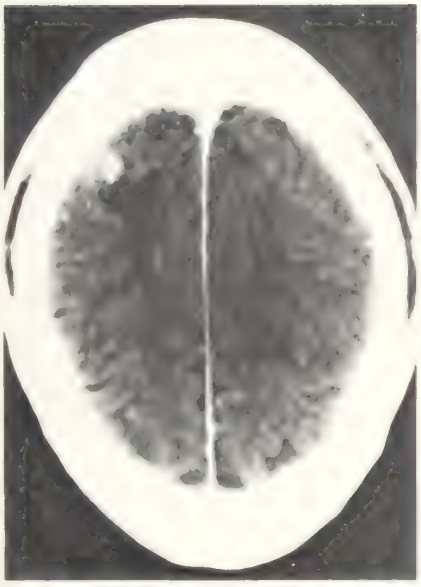


FIGURE 1: A CT scan demonstrating a low density area at the left parietal lobe.



FIGURE 2: Larval cyst removed from the brain. Rostellar hooks characteristic of Taenia solium are seen.

mediate hosts. However, most patients who possess CNS cysticercosis do not have the adult tapeworm. This sug gests that the infection may have been acquired exogenously or that any adult tapeworm present may have been treated or cured spontaneously.

Pathophysiology: The number of cysticerci can range from one to hun dreds, or even thousands in the brain. The solitary form is uncommon and usually occurs in the ventricircular system or cerebral hemisphere.[5] The typical cyst measures 5 to 10 mm but often reaches several centimeters at the base of the brain, where they are always multiple. Cysticerci can lodge in any part of the brain, with the location determining the clinical manifestations. Symptoms and signs are caused by three major pathophysiologic processes: 1) the mass effect, 2) the inflammatory response evoked by the parasite, and 3) obstruction of the foramina and ventricular systems of the brain.

Larvae at the base of the brain frequently form grape-like clusters called cysticercus-racemose, which can simulate a neoplasm radiologically. The racemose cyst can grow large enough to obstruct the foramina Luschka and Magendie so that the aqueduct and fourth ventricle dilate without midbase deviation.

Clinical presentation: There is no pathonomonic sign and symptom.[6] The onset may be sudden, but is more frequently gradual, and the course is progressive with long remissions between exacerbations. Major complaints were those of increased intracranial pressure. Severe headache, nausea, and vomiting were the most common symptoms. The presenting physical signs were also of increased intracranial pressure, i.e., papilledema and change in mental status.

Diagnosis: The CT scan is most useful and the findings may be diagnostic in some cases. The appearance of cerebral cysticercosis varies and probably depends on the stage of the disease. Early, the cysts appear as solid nodular or cystic structues of varying size.[8,9] They can be surprisingly large, up to 5 cm in diameter.[10] Late in the disease the cysts may be calcified. Some lesions can be seen only with con trast material and subsequent enhance ment, whereas others show ring enhancement around easily demonstrable lesions. Therefore, the use of contrast enhanced CT scans increases the sensitivity. Detection of multiple scattered cystic or calcified lesions is highly suggestive of cysticercosis, but less certain when there are only single lesions. Other diagnostic modalities are neither sensitive nor specific.

Treatment: The disease has its own particular course, depending on immune response,[11] the severity of infection, the location of the cyst (in brain parenchyma, subarachnoid space, or ventricular cavities), and number of neurologic lesions. It is important to evaluate the activity of neurocysticercosis and plan therapeutic strategies.[12]

Inactive stage: Parenchymal calcified granulomas were the most common findings of neurocysticercosis. Their presence indicates that the previous cysts were destroyed by the host. Epilepsy was a frequent sign in this

group and may be controlled by anticonvulsant drugs.[13,14]

Hydrocephalus without evidence of inflammation in the cerebrospinal fluid (CSF) remained in few cases as sequelae of meningeal fibrosis after inflammatory response was over. Ventriculo-atrial shunt is indicated in this group of patients.[6] Most of the shunts alleviate the signs and symptoms of increased intracranial pressure, but free-floating cysts or adhesions secondary to ventriculitis tend to obstruct them. Frequent shunt revisions may be necessary to ensure potency.

Treatment for inactive forms of neurocysticercosis should be directed to control clinical sequelae as epilepsy or hydrocephalus. There is no indication for anticysticercosis drugs or steroid therapy in these cases.

Active stage: Cysts may localize in the meninges with individual cysts found adherent to the pia, in the cortical tissue beneath the pia, or floating freely in the subarachnoid space. Meningitis or arachnoiditis is indicated by increased mononuclear cells and proteins and a positive immunologic test for cysticercosis in the CSF. Parenchymal cysts in the brain often produce local symptoms due to edema, destruction, or irritation of brain tissue. Several patients with parenchymal cysts did not show alterations in CSF because they were not in direct contact with the subarachnoid space. Intraventricular cysts are rare and are usually asymptomatic unless the flow of CSF is obstructed. Spinal cysts were another unusual variety of neurocysticercosis. Suggested therapeutic measures for each form of neurocysticercosis vary: steroids and an anticysticercosis drug (praziquantel) for meningitis,[15,16] ventriculo-atrial shunts for hydrocephalus, praziquantel for parenchymal cysts, surgery or praziquantel for cyst clumps, surgical extirpation of intraventricular cysts and spinal cyst (if praziquantel fails).

We conclude with a quote from Nash and Neva.[17] "We must not forget that despite sophisticated ways to diagnose cysticercosis and the development of new drugs to treat it, the introduction of simple, preventive health practices in endemic areas would be even more effective in controlling the disease."

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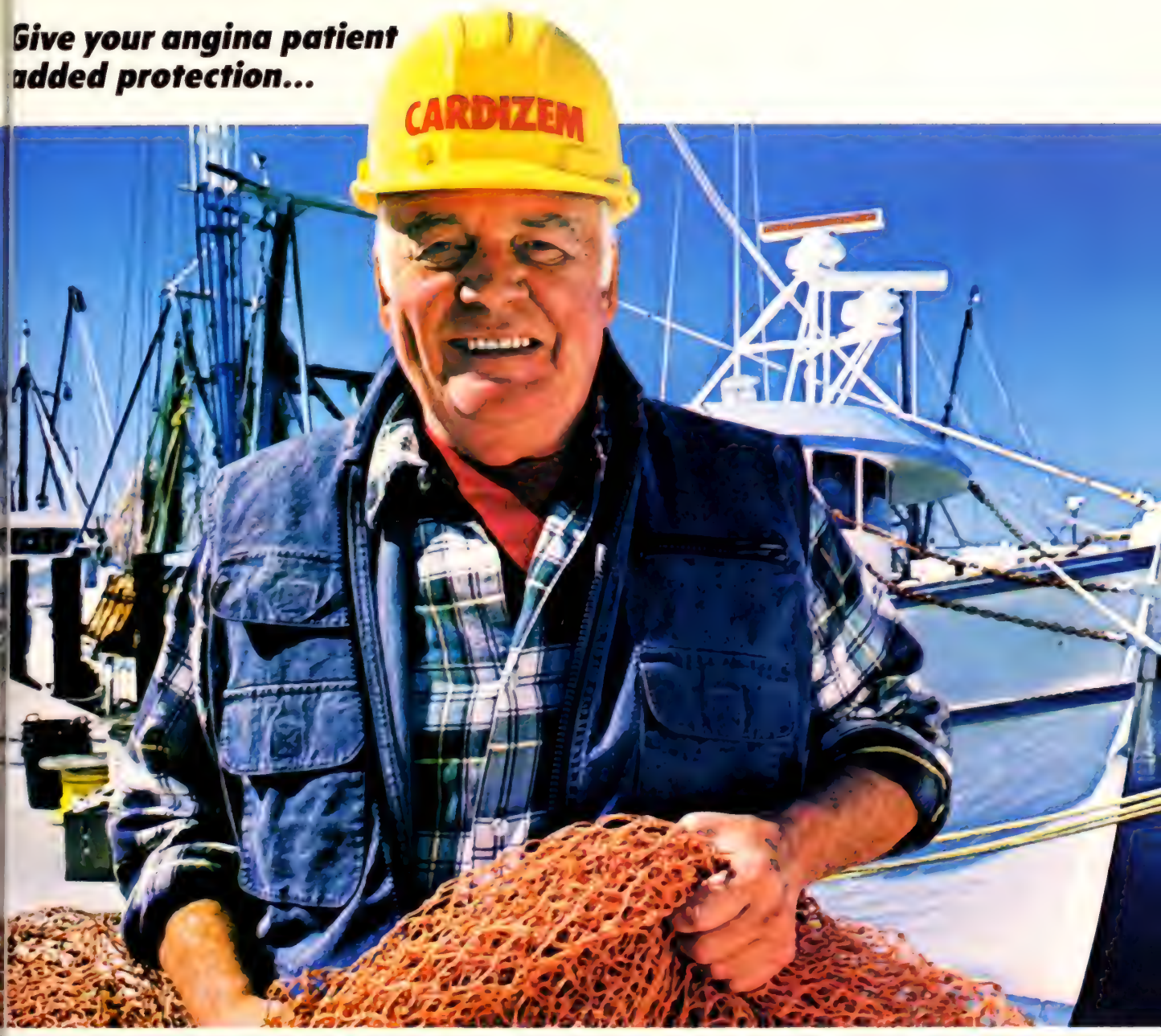
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FEWER SIDE EFFECTS IN ANTIANGINAL THERAPY

BRIEF SUMMARY

CARDIZEM® (diltiazem hydrochloride) is a calcium ion influx inhibitor (slow channel blocker or calcium antagonist)

INDICATIONS AND USAGE

1. **Angina Pectoris Due to Coronary Artery Spasm.** CARDIZEM is indicated in the treatment of angina pectoris due to coronary artery spasm. CARDIZEM has been shown effective in the treatment of spontaneous coronary artery spasm presenting as Prinzmetal's variant angina (resting angina with ST-segment elevation occurring during attacks).
2. **Chronic Stable Angina (Classic Effort-Associated Angina).** CARDIZEM is indicated in the management of chronic stable angina. CARDIZEM has been effective in controlled trials in reducing angina frequency and increasing exercise tolerance.

There are no controlled studies of the effectiveness of the concomitant use of diltiazem and beta-blockers or of the safety of this combination in patients with impaired ventricular function or conduction abnormalities.

CONTRAINDICATIONS

CARDIZEM is contraindicated in (1) patients with sick sinus syndrome except in the presence of a functioning ventricular pacemaker, (2) patients with second- or third-degree AV block except in the presence of a functioning ventricular pacemaker, and (3) patients with hypotension (less than 90 mm Hg systolic).

WARNINGS

1. **Cardiac Conduction.** CARDIZEM prolongs AV node refractory periods without significantly prolonging sinus node recovery time except in patients with sick sinus syndrome. This effect may rarely result in abnormally slow heart rates (particularly in patients with sick sinus syndrome) or second- or third-degree AV block (six of 1243 patients for 0.48%). Concomitant use of diltiazem with beta-blockers or digitalis may result in additive effects on cardiac conduction. A patient with Prinzmetal's angina developed periods of asystole (2 to 5 seconds) after a single dose of 60 mg of diltiazem.
2. **Congestive Heart Failure.** Although diltiazem has a negative inotropic effect in isolated animal tissue preparations, hemodynamic studies in humans with normal ventricular function have not shown a reduction in cardiac index nor consistent negative effects on contractility (dp/dt). Experience with the use of CARDIZEM alone or in combination with beta-blockers in patients with impaired ventricular function is very limited. Caution should be exercised when using the drug in such patients.
3. **Hypotension.** Decreases in blood pressure associated with CARDIZEM therapy may occasionally result in symptomatic hypotension.
4. **Acute Hepatic Injury.** In rare instances, patients receiving CARDIZEM have exhibited reversible acute hepatic injury as evidenced by moderate to extreme elevations of liver enzymes. (See PRECAUTIONS and ADVERSE REACTIONS.)

PRECAUTIONS

General. CARDIZEM (diltiazem hydrochloride) is extensively metabolized by the liver and excreted by the kidneys and in bile. As with any new drug given over prolonged periods, laboratory parameters should be monitored at regular intervals. The drug should be used with caution in patients with impaired renal or hepatic function. In subacute and chronic dog and rat studies designed to produce toxicity, high doses of diltiazem were associated with hepatic damage. In special subacute hepatic studies, oral doses of 125 mg/kg and higher in rats were associated with histological changes in the liver which were reversible when the drug was discontinued. In dogs, doses of 20 mg/kg were also associated with hepatic changes, however, these changes were reversible with continued dosing.

Drug Interaction. Pharmacologic studies indicate that there may be additive effects in prolonging AV conduction when using beta-blockers or digitalis concomitantly with CARDIZEM. (See WARNINGS.)

Controlled and uncontrolled domestic studies suggest that concomitant use of CARDIZEM and beta-blockers or digitalis is usually well tolerated. Available data are not sufficient, however, to predict the effects of concomitant treatment, particularly in patients with left ventricular dysfunction or cardiac conduction abnormalities. In healthy volunteers, diltiazem has been shown to increase serum digoxin levels up to 20%.

Carcinogenesis, Mutagenesis, Impairment of Fertility. A 24-month study in rats and a 21-month study in mice showed no evidence of carcinogenicity. There was also no mutagenic response in in vitro bacterial tests. No intrinsic effect on fertility was observed in rats.

Pregnancy. Category C. Reproduction studies have been conducted in mice, rats, and rabbits. Administration of doses ranging from five to ten times greater (on a mg/kg basis) than the daily recommended therapeutic dose has resulted in embryo and fetal lethality. These doses, in some studies, have been reported to cause skeletal abnormalities. In the perinatal/postnatal studies, there was some reduction in early individual pup weights and survival rates. There was an increased incidence of stillbirths at doses of 20 times the human dose or greater.

There are no well-controlled studies in pregnant women, therefore, use CARDIZEM (diltiazem hydrochloride) in pregnant women only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers. It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, exercise caution when CARDIZEM is administered to a nursing woman if the drug's benefits are thought to outweigh its potential risks in this situation.

Pediatric Use. Safety and effectiveness in children have not been established.

ADVERSE REACTIONS

Serious adverse reactions have been rare in studies carried out to date, but it should be recognized that patients with impaired ventricular function and cardiac conduction abnormalities have usually been excluded.

In domestic placebo-controlled trials, the incidence of adverse reactions reported during CARDIZEM therapy was not greater than that reported during placebo therapy.

The following represent occurrences observed in clinical studies which can be at least reasonably associated with the pharmacology of calcium influx inhibition. In many cases, the relationship to CARDIZEM has not been established. The most common occurrences, as well as their frequency of presentation, are: edema (2.4%), headache (2.1%), nausea (1.9%), dizziness (1.5%), rash (1.3%), asthenia (1.2%), AV block (1.1%). In addition, the following events were reported infrequently (less than 1%) with the order of presentation corresponding to the relative frequency of occurrence:

Cardiovascular	Flushing, arrhythmia, hypotension, bradycardia, palpitations, congestive heart failure, syncope
Nervous System	Paresthesia, nervousness, somnolence, tremor, insomnia, hallucinations, and amnesia
Gastrointestinal	Constipation, dyspepsia, diarrhea, vomiting, mild elevations of alkaline phosphatase, SGOT, SGPT, and LDH
Dermatologic	Pruritus, petechiae, urticaria, photosensitivity
Other	Polyuria, nocturia

The following additional experiences have been noted:

A patient with Prinzmetal's angina experiencing episodes of vasospastic angina developed periods of transient asymptomatic asystole approximately five hours after receiving a single 60-mg dose of CARDIZEM.

The following postmarketing events have been reported infrequently in patients receiving CARDIZEM: erythema multiforme, leukopenia, and extreme elevations of alkaline phosphatase, SGOT, SGPT, LDH, and CPK. However, a definitive cause and effect between these events and CARDIZEM therapy is yet to be established.

OVERDOSAGE OR EXAGGERATED RESPONSE

Overdosage experience with oral diltiazem has been limited. Single oral doses of 300 mg of CARDIZEM have been well tolerated by healthy volunteers. In the event of overdosage or exaggerated response, appropriate supportive measures should be employed in addition to gastric lavage. The following measures may be considered:

Bradycardia	Administer atropine (0.60 to 1.0 mg). If there is no response to vagal blockade, administer isoproterenol cautiously.
High-Degree AV Block	Treat as for bradycardia above. Fixed high-degree AV block should be treated with cardiac pacing.
Cardiac Failure	Administer inotropic agents (isoproterenol, dopamine, or dobutamine) and diuretics.
Hypotension	Vasopressors (eg, dopamine or levarterenol bitartrate).

Actual treatment and dosage should depend on the severity of the clinical situation and the judgment and experience of the treating physician.

The oral LD_{50}'s in mice and rats range from 415 to 740 mg/kg and from 560 to 810 mg/kg, respectively. The intravenous LD_{50}'s in these species were 60 and 38 mg/kg, respectively. The oral LD_{50} in dogs is considered to be in excess of 50 mg/kg, while lethality was seen in monkeys at 360 mg/kg. The toxic dose in man is not known, but blood levels in excess of 800 ng/ml have not been associated with toxicity.

DOSAGE AND ADMINISTRATION

Exertional Angina Pectoris Due to Atherosclerotic Coronary Artery Disease or Angina Pectoris at Rest Due to Coronary Artery Spasm. Dosage must be adjusted to each patient's needs. Starting with 30 mg four times daily, before meals and at bedtime, dosage should be increased gradually (given in divided doses three or four times daily) at one- to two-day intervals until optimum response is obtained. Although individual patients may respond to any dosage level, the average optimum dosage range appears to be 180 to 240 mg/day. There are no available data concerning dosage requirements in patients with impaired renal or hepatic function. If the drug must be used in such patients, titration should be carried out with particular caution.

Concomitant Use With Other Antianginal Agents:

1. **Sublingual NTG** may be taken as required to abort acute anginal attacks during CARDIZEM therapy.
2. **Prophylactic Nitrate Therapy** — CARDIZEM may be safely coadministered with short- and long-acting nitrates, but there have been no controlled studies to evaluate the antianginal effectiveness of this combination.
3. **Beta-blockers.** (See WARNINGS and PRECAUTIONS.)

HOW SUPPLIED

CARDIZEM 30-mg tablets are supplied in bottles of 100 (NDC 0088-1771-47) and in Unit Dose Identification Paks of 100 (NDC 0088-1771-49). Each green tablet is engraved with MARION on one side and 1771 engraved on the other. CARDIZEM 60-mg scored tablets are supplied in bottles of 100 (NDC 0088-1772-47) and in Unit Dose Identification Paks of 100 (NDC 0088-1772-49). Each yellow tablet is engraved with MARION on one side and 1772 on the other. Issued 4-1/84

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Study of the American Diet

An Editorial

W. D. SNIVELY JR., M.D.
Evansville

IN THEIR "Study of the American Diet," which appears elsewhere in this issue, Johnson and Vaughan examine a well known maxim: "One has no need of a vitamin-mineral supplement if he eats a good balanced diet." The precept applies, of course, only to relatively healthy, well nourished people. The authors examine the adage from several standpoints. Questioning some 86 physicians, they found that 44 of the 52 responding agreed with the maxim. Satisfied that the precept is in deed widespread, the authors decided to look into the truth of it.

The author, a consulting editor of INDIANA MEDICINE, is Professor Emeritus of Life Sciences at the University of Evansville.

Using a computer program with recent nutritional data from the U.S. Department of Agriculture, they asked volunteers to record their daily food and liquid intake. The subjects were middle class and ranged from teenagers to senior citizens; all considered themselves to be in good general health. The authors analyzed 614 daily diets. Of these, only one achieved 100% of the U.S. RDA for all of the 11 vitamins and five minerals. (The paragon who consumed this diet was a weightlifting athlete who took in 3,768 calories that day.) Not only were the diets short in vitamin and mineral content, they were high in fat and low in fiber. On the basis of their results, the authors concluded—quite reasonably—that it is not easy to eat a "good balanced diet."

One of the greatest helps in achieving a balanced diet is the use of the four food group method, which includes: 1) the meat and alternates group (alternates include eggs, nuts, and the like); 2) the fruit and vegetable group; 3) the grain group; and 4) the milk and cheese group. The idea, of course, is to include at least one member of each group in the daily diet.

The authors outlined a balanced diet based on the four food group method, additionally designed to be low in fat and high in fiber. Its protein content was generous. On analysis, their diet—which appears excellent—was still found to be lacking the U.S. RDA for one mineral and four vitamins.

The report by Drs. Johnson and Vaughan appears on the next page.

The conclusion of the authors is that the precept may be more of a canard than a guiding truism. Their final advice: "Take a good quality food supplement of vitamins and minerals as a nutritional insurance"—which, on the basis of their findings, appears reasonable.

Study of the American Diet

WILLIAM V. JOHNSON, M.D.
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The Authors Acknowledge That Conventional Medical Wisdom Says You Don't Need to Take Supplements if You Eat a 'Good, Balanced Diet.' Their Study, However, Finds That Such 'Wisdom' May Be a Myth . . .

Dr. Johnson is a Harrison County radiologist. Dr. Vaughan is a retired U.S. Air Force colonel and a former NASA researcher.

Acknowledgments: For assistance in collecting data: Jack Latva, Jim Gibson, Julie Vaughan, Alice Seiter and Angie Scarengelli.

Correspondence: William V. Johnson, M.D., Rt. 2, Corydon Ridge Road, Lanesville, Ind. 47136.

"DOCTOR, SHOULD I take vitamins?" How many times have you heard that question? Conventional medical wisdom, as contained in text books and as we learned in medical school, says you don't need to take supplements if you eat a "good balanced diet." To confirm this generally accepted opinion, we surveyed all the physicians on the staff of a medium-sized hospital.

Eighty-six physicians received a questionnaire that asked this question: Doctor, if a patient of yours, who is in good general health, asked you, "Should I take vitamins?" how would you reply? There was 60% response, which was a good return, and 85% of those responding checked the answer: No, you don't need to take vitamins if you eat a good balanced diet.

Next, the question arose, What is a good balanced diet and how can you be sure it is adequate? As background, The Recommended Daily Allowance (RDA) of vitamins and minerals was first developed by The Food and Nutrition Board of the National Research Council in 1943. This specifies levels of nutrient intake desired to maintain adequate nutrition in healthy persons. This is revised every three to five years or so. At present, there are listed the RDA for 12 vitamins and seven minerals. More vitamins and minerals than this are known to be essential but, as yet, the RDA for them has not been established. These include the B vitamins PABA and Inositol, and the minerals Selenium, Chromium and Manganese.

Thus, if you just took in the nutrients that have an established RDA, you would still be missing some essential nutrients. That is the reason for the recommendation to eat a "balanced diet."

The "Food Groups" were introduced in 1956 to promote the eating of a variety of foods. There are The Four Food Groups method and The Seven Basic Food Groups method and other variations of these. Most promotion and literature for The Food Groups has been done by the National Dairy Council and the agriculture industry.

In order to study the American diet, we had to make some basic assumptions due to lack of available data:

1. The U.S. Department of Agriculture data base for the nutritive value of foods has values for 10 vitamins and five minerals. Two vitamins, Biotin and Vitamin D, have RDA established but are not in U.S.D.A. data base (we added vitamin D values from a private source). Two minerals, copper and iodine, have RDA established but are not in U.S.D.A. data base. So our study, while recognizing there are other essential nutrients not included, is limited to analyzing diets for the 11 vitamins and five minerals for which there is a good data base.

2. We assumed that the nutrient value of the diets analyzed would have the same value as those in the U.S.D.A. data base. Nutritional value of foods depends on many things, such as soil conditions, how and where the food is grown, how long and by what method the food has been stored, and how it was prepared and cooked. We assumed these conditions would be equal for our volunteers.

3. We used the U.S. RDA as the standard to aim for in this study. The Food and Drug Administration established the U.S. RDA for uniformity in labeling processed foods. In general, the U.S. RDA levels are slightly higher than RDA levels for most nutrients. There are proponents on both sides of the question as to whether the U.S. RDA and RDA values

are adequate for proper nutrition. However, we feel these to be well established and accepted so we used the U.S. RDA as our standard.

4. We assumed that by evaluating a large number of diets, we would have a composite of the nutrient value of the average American diet. It has been said that, when evaluating the RDA for an individual's diet, there would be high nutrient days and low nutrient days but that they would average out and provide a balanced diet. We assumed that if we have a sufficiently large number of daily diets recorded, these would include those "high nutrient days and low nutrient days" to balance out and provide an average.

We acquired a computer program using the latest data available from the U.S. Department of Agriculture. Volunteers were asked to record their daily food and drink intake. Six hundred fouteen such diets were recorded and analyzed with computer assistance. The volunteers were a wide variety. Ages ranged from teenagers to older citizens in their 60s. Most of them would be considered "average middle class" and considered themselves to be in "good general health" at the time.

The results were somewhat surprising. The composite or average of the 614 daily diets show nutrient values as demonstrated in *Figure 1*.

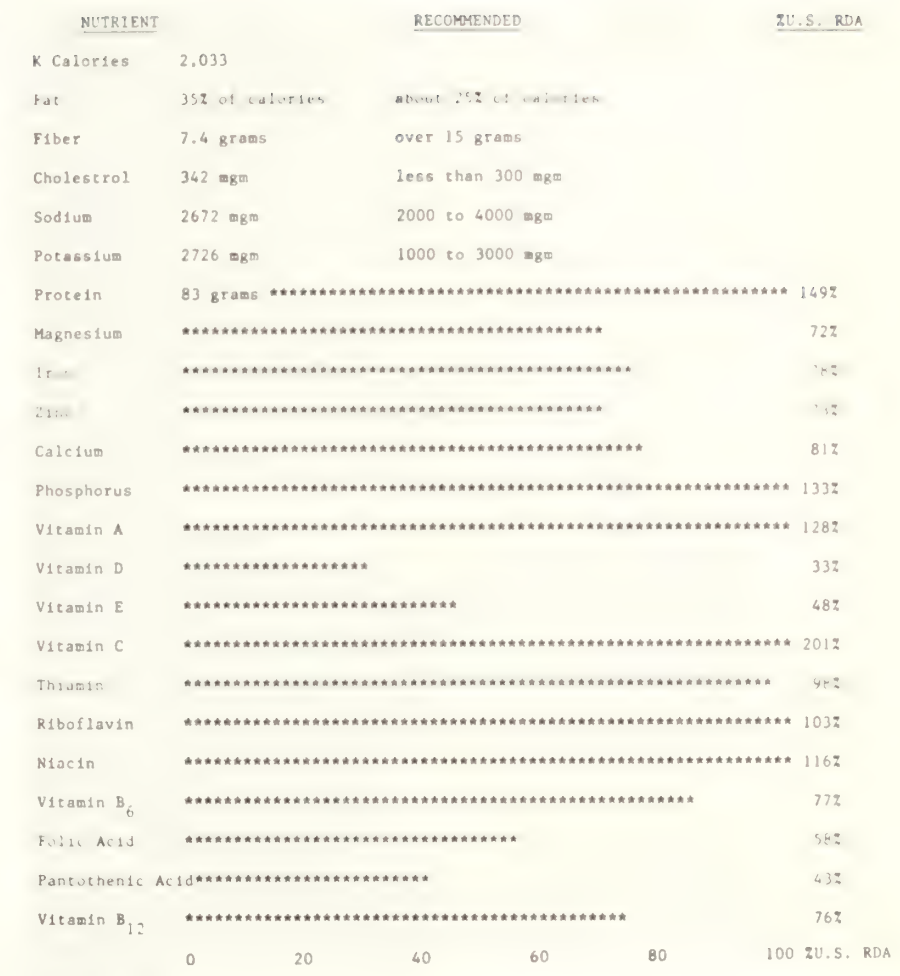


FIGURE 1: Bar chart of the average American diet.

The "average" American diet was high in fat and low in fiber. As regards vitamins and minerals, the diet achieved the Recommended Daily Allowance (U.S. RDA) for only four of the 11 vitamins and only one of the five minerals. It appears that the average American diet is nutritionally inadequate. It was interesting to note that only one diet, of the 614 daily diets analyzed, achieved 100% of the U.S. RDA for all 11 of the vitamins and all five of the minerals. This was the daily diet of a weight-lifter and athletic trainer, and his diet that day totaled 3,768 calories.

After analyzing how people actually do eat, we examined some recommended diets in various health and weight control magazines. We did not find any recommended diet that completely satisfied the RDA for vitamins and minerals. We then outlined a daily diet that would satisfy the recommendations of a "balanced diet" based on the Food Group method. This diet, as follows, satisfies both the Four Food Group Method and the Seven Basic Foods recommendations. It is also designed to be a low fat and high fiber diet.

Breakfast: 2 oblong shredded wheat biscuits, 1 cup of raisin bran, 1 banana, 1 cup lowfat (1%) milk, 1 cup black coffee

Lunch: ½ tomato, ½ cup lowfat (2%) cottage cheese, sandwich of tuna (3 oz) on 2 slices whole wheat bread, 1 tablespoon of low-cal mayonnaise, 1 cup of lowfat (1%) chocolate milk

Dinner: 1½ cups chopped lettuce, 2 tablespoons low-cal Italian dressing, ½ chicken, broiled, 1 baked potato, 1 tablespoon whipped margarine, 1 cup chopped broccoli, 2 slices whole wheat bread, ¼ cantaloupe, 1 glass unsweetened tea

Evening: 1 12-oz can of beer

This daily diet will provide a good balance of various food groups and is a more healthful diet than most people eat. It is a low fat, high fiber and high protein diet. The nutritional analysis of this diet is shown in *Figure 2.*

This diet, which is considered a good, healthful and balanced diet, shows, on analysis, to be inadequate in the U.S. RDA for one mineral and four vitamins. This example re-inforces the conclusion of our study.

Our conclusion, contrary to conven tional wisdom, is that it is difficult to provide yourself with a "good balanced diet" even when you are trying. Most people don't plan their daily diets in advance so as to get a good nutrient mix. However, most people do perceive some need to take food supplements such as vitamin-mineral combinations. It has been estimated that two of every three Americans take some type of food supplement some of the time. Thus, there is a perceived need by the general public. Physicians should respond to this need in a positive and helpful manner. We believe it would behoove physicians to re-assess their nutritional knowledge and to re-evaluate the "good balanced diet" myth as an answer to nutritional questions.

It appears that good nutritional advice for the average person would be:

1. Attempt to decrease the amount of fat, sugar, and salt in the daily diet. This means less processed foods, less junk foods and less fast food restaurants.

2. Attempt to eat more fresh fruits and vegetables, more complex carbohydrates (baked potato is good), more whole wheat products. This will add fiber to the diet and also provide for more nutrients, some of which may not have been discovered yet.

3. Take a good quality food supplement of vitamins and minerals as a nutritional insurance.

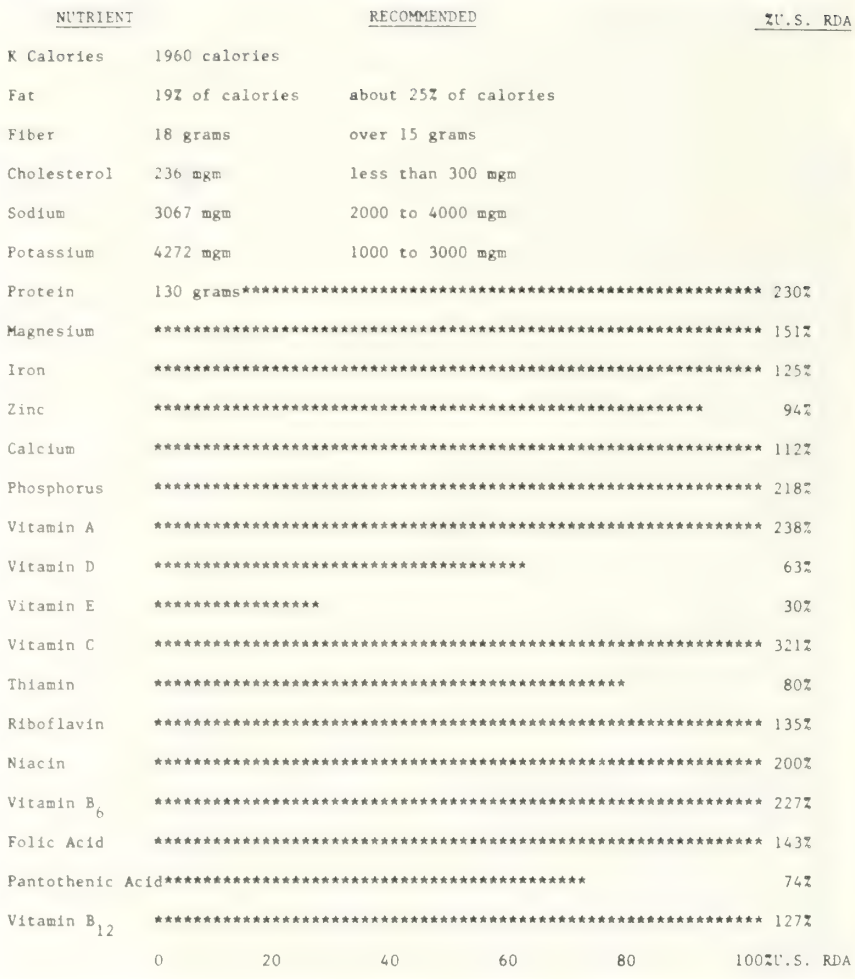


FIGURE 2: Bar chart of sample balanced, low fat, high fiber and high protein diet.



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Clinico-Pathologic Conference

33-Year-Old Man with Shortness of Breath and Chest Pain

Edited by
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Grand Rounds—Indiana University School of Medicine

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This is an edited transcript of the clinico pathologic conference conducted in December 1985 during a Grand Rounds session of the Dept. of Medicine, Indiana University School of Medicine.
Discussants:
Vernon Vix, M.D., Dept. of Radiology;
William Armstrong, M.D., Dept. of Medicine;
Bruce Waller, M.D., Dept. of Pathology.

A 33 YEAR OLD WHITE MAN was admitted to the hospital after the recent onset of shortness of breath and chest pain. Two weeks before admission, he had an episode of sore throat followed by malaise, cough, and low grade fever, all of which resolved. Three days before admission, he noted nonproductive cough, ankle swelling, and shortness of breath. Two days prior to admission, he developed orthopnea and began to complain of anterior chest pain that was dull and relieved by sitting upright. He denied any exertional chest pain and had no previous history of exertional dyspnea.

His family history failed to disclose the presence of any cardiovascular disease. He was not diabetic and had no history of hypertension. He did smoke one pack of cigarettes per day and had no known history of hyperlipidemia. He denied any history of rash or arthritis and had no known history of rheumatic fever. He denied any unusual exposures to toxins and denied the use of intravenous drugs.

Four years before admission, the patient had been admitted with multiple stab wounds of the left thorax and at that time required a tube thoracostomy for reinflation of a collapsed left lung. Chest x-ray taken at the time of that stab wound was incidentally noted to show an increased cardiac silhouette as well as prominent pulmonary vascularity and a right pleural effusion, all felt to be compatible with congestive heart failure.

The rest of the patient's past medical history was unremarkable. At the time of admission he was taking no medicines and had no known allergies. He did have a history of heavy ethanol use in the past but had not been drinking for several weeks prior to admission.

Physical examination on admission showed a thin white man whose blood pressure was 132/60. His heart rate was 108, respirations 28, temperature 97°. Head, eye, nose and throat exam revealed a right esotropia, but the eyes were otherwise normal. The neck showed 7 cm of jugular venous distention at 90°. The carotid pulses were decreased bilaterally. Examination of the lungs revealed bibasilar rales. Cardiovascular exam revealed a faint PMI that was displaced 2 cm lateral to the midclavicular line in the 5th intercostal space. The second heart sound was single. First heart sound was soft. There was an S_3 gallop and an S_4 gallop present. No murmurs were appreciated. The liver was 18 cm in span and tender.

Examination of the extremities revealed moderate edema. The right shoulder was dislocated anteriorly. Chest x-ray showed cardiomegaly with bilateral perihilar infiltrates and cephalization of pulmonary vascularity. Bilateral pleural effusions were present as well as Kerley b-lines. Electrocardiogram showed sinus tachycardia, with left axis deviation and nonspecific ST and T wave changes.

Laboratory examination showed a white count of 13,900/mm^3, with a differential of 11 bands, 71 polys, and 10 lymphs. Hemoglobin was 17 grams, hematocrit 51%. Platelet count was 244,000, the sodium 139, potassium 5.3, chloride 104, CO_2 26. The BUN was 22, the creatinine 1.4, glucose 108. Urinalysis showed 2+ protein, 5-10 white cells per high powered field and

no other abnormalities. Arterial blood gas on room air showed a PO_2 80, PCO_2 28 and pH 7.47.

Two-dimensional echocardiography was performed showing a dilated left ventricle, dilated right ventricle and dilated right atrium. The left ventricular function was globally diminished. The aortic valve was calcified and appeared immobile. The aortic root was dilated to a dimension of 6.6 cm. A minimal pericardial effusion was present at the base of the heart and an apical thrombus was seen in the area of the posterolateral wall. Pulmonary hypertension was present.

On the second hospital day a Multiple Uptake Gated Acquisition (MUGA) scan was performed. The study showed global hypokinesis of both ventricles. The left ventricular ejection fraction was 15%, the right ventricular ejection fraction was 14%. The regurgitant index was calculated to be .81, which was thought to be within normal limits.

The patient was treated with digitalis, oxygen and bedrest with some improvement in his symptoms. An orthopedic consultation was obtained to evaluate the shoulder dislocation. It was felt that this was a chronic problem and no surgical intervention was recommended.

The patient continued to diurese at bedrest with low flow oxygen and digitalis, and his symptoms continued to improve. On the fourth hospital day the patient reportedly had a cardiopulmonary arrest while eating. He was found without blood pressure but in sinus rhythm. Resuscitative efforts were unsuccessful and the patient died. An autopsy was performed.

Dr. Vix: We have a chest x-ray four years ago at which time he was admitted with a stab wound. Keep in mind that the man is only 29 years old at this time. The heart is enlarged and his aorta is larger than it should be. There is a peculiar dilation of the aortic knob. The origin of the left subclavian artery may be dilated as well. Three days after admission the heart is considerably larger and congestive heart failure is present, evidenced by cephalization of pulmonary flow and pleural effusions. On readmission to the hospital, his chest x-ray again showed a large heart with congestive heart failure.

Dr. Armstrong: In reviewing this case, it came immediately to mind that I was not dealing with a simple problem of one disease. I think I will be able to establish the major pathologic abnormality that led to this young man's demise, but a few questions will be left unanswered. I would like to first review the pertinent history of the case.

A 33-year-old man with dyspnea, cough, chest pain, and antecedent symptoms of a viral respiratory tract infection developed evidence of right and left ventricular failure. In a 33-year-old man without prior medical history this would suggest myocarditis as the basis of the left ventricular dysfunction. However, he clearly had evidence of left ventricular dysfunction four years prior. Thus, we could be dealing with incidental infection and underlying organic heart disease. A primary viral myocarditis is unlikely to explain the clinical course. Systemic illness may have contributed to his decompensation, since in patients with advanced heart disease of any type, a systemic infection can trigger decompensation of underlying heart disease. I suspect that's what we're dealing with here.

What is the underlying heart disease? It is pertinent that this man was 33 years old, making a number of illnesses unlikely, such as advanced coronary artery disease. The positive history of heavy alcohol use raises the question of an alcoholic cardiomyopathy and also brings to mind that the history may be unreliable. He was noted to have cardiomegaly and congestive heart failure four years prior to admission. He apparently did not have disabling symptoms of congestive failure at that point, but with the fluids administered at the time of surgery clearly developed more marked cardiomegaly and evidence of congestive heart failure. That does not occur with a normal heart, and implies underlying heart disease.

That his heart size increased rather dramatically three days after the stab wound should bring to mind that perhaps a high output state was induced by an acquired AV shunt due to a stab wound. Since cardiac function normalized spontaneously after three days, this is unlikely. It is far more likely that this represented a volume overload. He also had a dislocated shoulder which may or may not be of importance. Pertinent negative features of the history include the absence of diabetes, hypertension or identified hyperlipidemia. The chest pain history is not specific. The pain could represent ischemia, not necessarily due to atherosclerotic coronary artery disease, but due to spasm, external compression, or dissection. Chest pain may be seen in patients with valvular heart disease. It is well known that patients with severe aortic stenosis develop chest pain that frequently resembles classic angina but occurs in the absence of coronary artery disease. Patients with severe aortic insufficiency can develop an identical type pain. These forms of ischemia are the result of inadequate perfusion of the coronary arteries due to elevated diastolic pressures in the ventricle, and, at least in the case of aortic insufficiency, reduced diastolic blood pressure.

Pericardial pain is possible in this case, or the pain may represent pleural disease or arise from the pulmonary parenchyma. This patient's pain is not specific, but is unlikely to represent ischemia. Pericardial disease is possible but there was no pericardial friction rub heard. The pleural effusions can be explained by congestive heart failure.

At this point I think we can develop a brief differential diagnosis and include a number of cardiac and noncar-

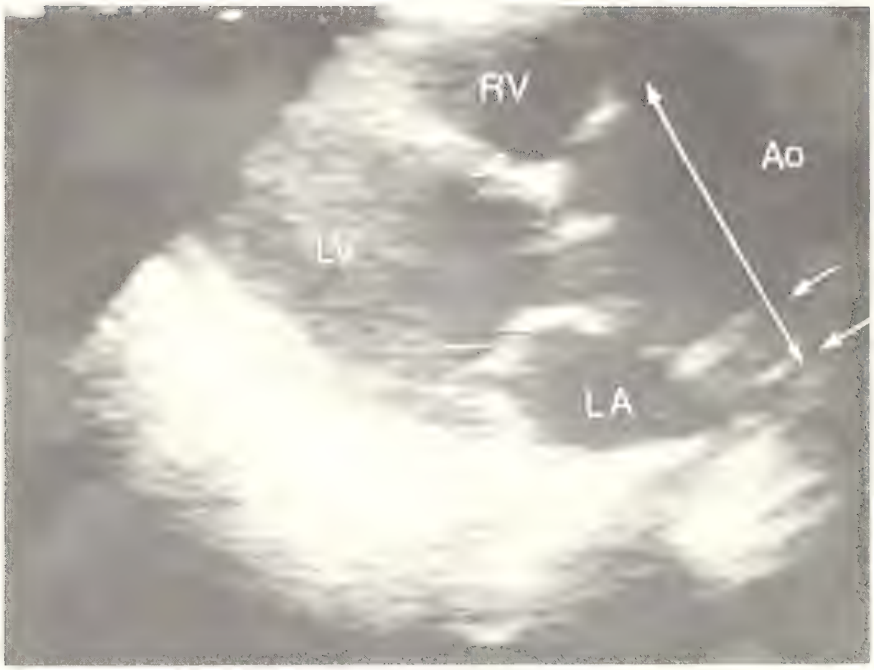


FIGURE 1: Two-dimensional echocardiogram long axis view of the patient's heart. (RV = right ventricle, LV = left ventricle, Ao = Aorta, LA = left atrium). The double-headed arrow marks the extent of aortic root dilation, which measured 6.6 cm. The two parallel arrows mark the limits of what may represent intimal dissection of the aorta.

diac diseases. A congestive cardiomyopathy, possibly related to alcohol, toxin, a familial disorder, or a remote myocarditis is possible. Primary valvular heart disease, including aortic stenosis, severe aortic insufficiency, and mitral regurgitation could all present like this. Ischemia is unlikely. A congenital or acquired shunt lesion needs to be excluded. Renal disease with volume overload, pericarditis and congestive failure could present like this. Pulmonary disease with an incidental cardiac disease needs to be considered.

What are the pertinent findings on physical examination? He had clear cut evidence of right and left ventricular failure with jugular venous distention, rales, and a displaced PMI. He had a single second heart sound and a third and fourth heart sound. The single second heart sound implies advanced left ventricular dysfunction and may accompany valvular heart disease. Normally, the second heart sound consists of two components, aortic and pulmonic, with the pulmonic valve closing later. In severe aortic stenosis with an immobile valve, the aortic component of the second sound may become inaudible, leaving only P_2. With advanced ventricular failure, closure of the aortic valve is delayed, resulting in paradoxical splitting of the second heart sound. At some point in that process the second heart sound becomes single. Severe aortic regurgitation also results in loss of the aortic component of the second heart sound.

At the time of his previous presentation there was no obvious murmur. A murmur of aortic insufficiency can be missed, depending on the cause. Murmurs of aortic insufficiency due to valve leaflet disruption are more common along the left sternal border, but valvular insufficiency sounds due to aortic root pathology are best heard along the right sternal border, and may be missed if not specifically sought. Hepatomegaly may be related to the patient's heavy alcohol use or due to right ventricular failure. He does clearly have evidence of right ventricular failure with elevated jugular venous pressure, but the liver was not described as being pulsatile.

The laboratory exam excludes significant renal insufficiency. The white count of 13,800 is nonspecific and can be seen with coincident viral illness, pneumonia, or any acute stress. Serologic testing for syphilis was not done and would be an important bit of information in light of his dilated aorta. A hemoglobin of 17 grams with obvious biventricular failure suggests arterial desaturation, again raising the question of shunt lesion; however, his room air PO_2 is 80. A congenital shunt lesion leading to this degree of cardiac disability is invariably associated with reversal of the shunt. The arterial oxygen saturation is not consistent with a right to left shunt.

The left ventricular ejection fraction is reported as 15% by MUGA scan with a regurgitant fraction of .81. The regurgitant fraction calculation is invalid in the presence of tricuspid insufficiency and the accuracy is reduced at ejection fractions below 30%. Most patients with this degree of cardiac dysfunction have tricuspid regurgitation by Doppler determination. The MUGA data do not prove that this man does not have aortic insufficiency. The chest x-ray specifically excludes some pulmonary illnesses, and reveals that his left ventricular dysfunction was present four years prior to admission. His EKG showed only non-specific changes.

I'd like to review his echocardiogram. The three pertinent features were a dilated, hypokinetic left ventricle as well as dilated left and right atria. Aortic valve disease is present with marked dilation of the ascending aorta. Note was made of a minimal pericardial effusion which is not uncom-

mon in congestive failure of any etiology. There was no suggestion of primary pericardial disease. An apical thrombus was mentioned by Dr. Kovacs and in personally reviewing the study I'm not convinced a thrombus was present.

Are we dealing with three separate cardiac lesions which are not related or are we dealing with one disease that relates to all of these? In looking at this a little more carefully, I'm afraid I'm going to have to come to the conclusion that at least two separate illnesses are present. I will rely on the echocardiogram to make my case. In the parasternal long axis view, the left ventricle was dilated and markedly hypokinetic. It has a typical myopathic type of appearance. There was no evidence of scar. The aortic root is massively dilated with most of the dilation occurring at the level of the sinuses. The aortic annulus is part of the fibroskeleton of the heart which does not distend easily and is rather resistant to dilation except in extreme cases of aortic valve disease.

Could valvular disease be responsible for the global LV dysfunction? There is no left ventricular hypertrophy. This makes long-standing aortic stenosis unlikely. Early in aortic stenosis chamber size is normal with progressive left ventricular hypertrophy. Eventually, left ventricular dysfunction develops because of increased mass with both increased volume and increased wall thickness. This man's LV mass is increased but his wall thickness isn't. This is unlikely to be the result of long-standing pressure overload, and is more consistent with a long-standing volume overload secondary to either AI or mitral regurgitation.

The aortic valve is diseased. The echocardiogram in short axis suggests the valve is bicuspid. The more anterior leaflet is heavily calcified and is relatively immobile. The posterior leaflet, however, is thin and appears mobile. The valve is likely to have some degree of stenosis associated with it, but the aortic stenosis is not critical and could not cause this degree of left ventricular dysfunction. Is the valve insufficient? Virtually all valves that have this degree of immobility are insufficient. Doppler examination would have been helpful to deliniate this further. I feel that the degree of left ventricular dysfunction is out of proportion to his intrinsic valvular disease.

The most impressive structure seen on echo was the aorta. His ascending aorta is the largest structure seen on echo. A dilated aorta may be secondary to hypertension, aortic stenosis, aortic insufficiency, or dissection. This man was not hypertensive, but does have aortic stenosis and some aortic insufficiency. Is the aortic dilation secondary to syphilitic aortitis? His age of 33 is very much against it. The latency period for developing cardiovascular syphilis is somewhere between 10 and 25 years. We would have to suppose an early acquisition of syphilis in this young man. The average age of patients presenting with luetic aortitis is 50. Syphilis involves the ascending aorta, but more often than not, involves a more distal portion of the aorta, and often produces a localized aneurysm rather than diffuse enlargement. I don't think this is syphilis. We must also consider primary aortic diseases. The entity presently known as annuloaortic ectasia has been described previously, and is graced with a number of different names, including cystic medial necrosis, and a forme frust of Marfan's disease. Annuloaortic ectasia refers to breakdown of connective tissue elements in the media of the ascending aorta, leading to marked dilation. The pathologic process is the same as seen in Marfan's syndrome but it may be present without other stigmata of Marfan's.

The normal aortic root has a diameter of 2½ to 3 cm. at the annulus, dilates by 2-3 mm at the level of the sinuses of Valsalva and narrows into the ascending aorta. In a case of dissection the aortic root is dilated, and often the line of dissection can be delineated echocardiographically. In experienced hands, about 80% of the time the dissection can be demonstrated by echocardiography, but echocardiography is not the primary diagnostic modality. In annuloaortic ectasia or Marfan's, marked dilation of the aortic root occurs primarily at the sinuses of Valsalva. This patient's aorta measures 6.6 cm and maximum dilation is present at the sinuses. In addition, this patient's echo showed a linear echo in the area of the right coronary cusp that may represent dissection.

How accurate is echocardiography in aortic root disease? In Marfan's syndrome, which is really the model for evaluating primary aortic root disease, echo is superior to chest x-ray for detecting dilation. The maximum dilation frequently occurs at the valve line, which is anatomically located between the cardiac chambers and may not be detectable on chest x-ray. In a consecutive series of patients from Johns Hopkins reported by Patricia Come,[1] echo was superior to chest x-ray for diagnosing aortic dilation, especially mild dilation. Aortic dilation in Marfan's syndrome can range from 1 cm, to 14-15 cm. Fox and colleagues[2] studied 30 consecutive patients found to have aortic root dilation on echo. Dilation above 4.5 cm was most likely due to annuloaortic ectasia and was not secondary to other lesions such as aortic stenosis, aortic insufficiency or hypertension. Dilation above 5.5 cm was seen only in primary forms of aortic disease.

Similar studies have been done angiographically by Lemon and White[3] who noted that in pure aortic insufficiency maximum aortic root dilation was 5.5 cm. The 6.6 cm measurement in this case clearly exceeds what we expect might be due to secondary causes. The aortic disease in this case then is primary. The defect is the integrity of the media, weakening the aorta and producing dilation. It is the process responsible for aortic disease in Marfan's syndrome. Aortic insufficiency is common in this illness, but the

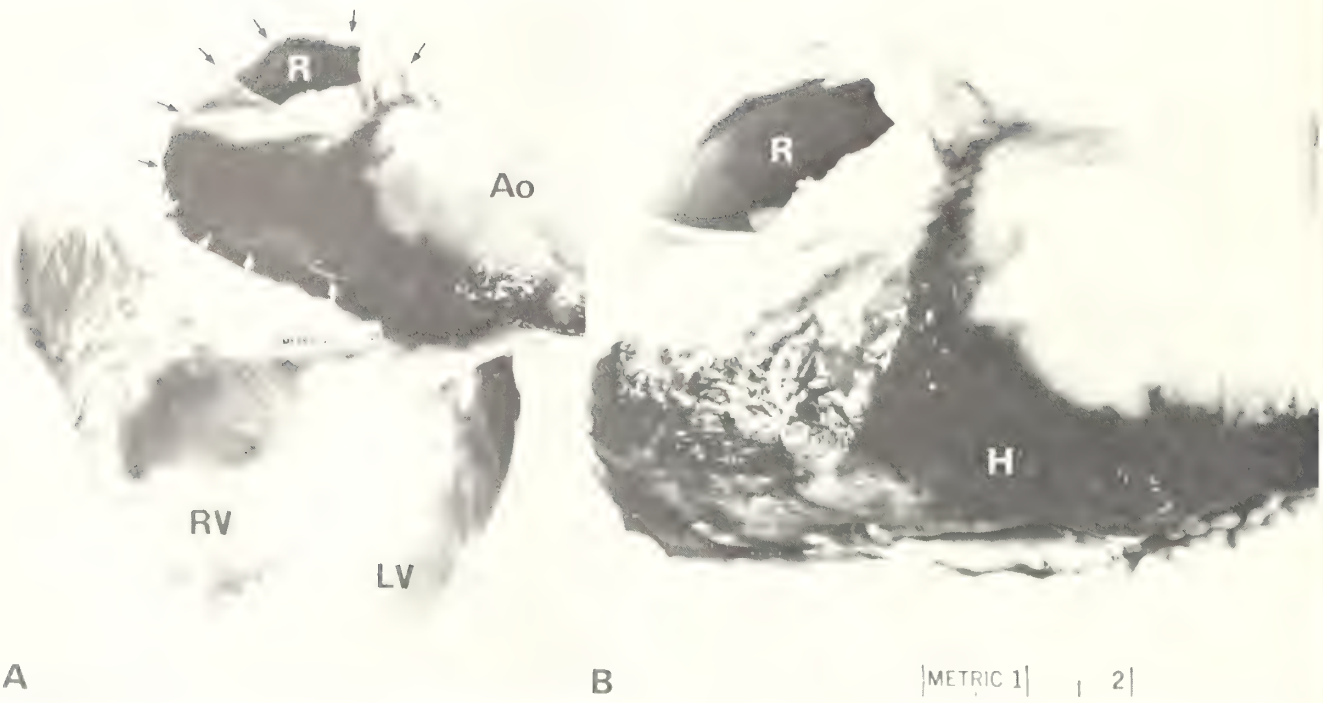


FIGURE 2: A—The sinus portion of ascending aorta (sinuses of Valsalva) was diffusely aneurysmal (arrows) with rupture (R). B—Close-up of ascending aorta showing rupture site and extensive aortic adventitial hemorrhage. (LV, RV = left and right ventricle, respectively).

severity is clinically underestimated in the majority of patients. Many of the peripheral signs of aortic insufficiency are absent because the large aortic root acts as a capacitor to dampen impulses. In the series of Fox, annuloaortic ectasia is commonly found in patients without other stigmata of Marfan's syndrome. Fox's 14 patients with idiopathic dilation of the aorta had no evidence of Marfan's but three first degree relatives did. In the series of Lemon and White, only six of 35 patients with annuloaortic ectasia had clinically evident Marfan's. This patient did not have the stigmata of Marfan's or evidence of any of the other heritable disorders of connective tissue.

What is the natural history of this disorder and is it consistent with this patient's course? In Marfan's syndrome, the median survival is around 40 years. Cardiac disease is the major cause of death in these patients, and 80% of the cardiac deaths are related to disease of the aorta. These data are collected from Murdoch.[4] Atypical chest pain is common. Dissection is also common and unrecognized. At the time of surgery, occult dissection is seen in 44% of these patients.

Is aortic valve disease involved in this man's demise? I think this is more likely to be an innocent bystander. We have no historical, echocardiographic, or MUGA evidence that this man has severe end stage AI to explain his left ventricular dysfunction. I can find no evidence that a bicuspid valve or intrinsic aortic valvular disease is associated with annuloaortic ectasia. Primary aortic valve disease has not been mentioned in any of the recent series.[1,3]

What was the immediate cause of death? A day or two after admission he died with electromechanical dissociation. A differential diagnosis would include massive myocardial infarction, left ventricular rupture, massive pulmonary embolus, massive hemorrhage, or cardiac tamponade. Massive dissection with cardiac tamponade or frank intrathoracic rupture due to rupture of an aneurysm would be consistent with this presentation.

I don't think this man suffered a massive myocardial infarction unless it was associated with dissection of a coronary artery. Massive pulmonary embolus is still a possibility in a bedridden man with biventricular failure. I can find no evidence that his primary aortic valve disease is related to his immediate demise.

I think his immediate cause of death was either dissection or rupture of the aorta. We cannot totally exclude a pulmonary embolus, but I think the unifying diagnosis is a dissection or rupture of the aorta.

Dr. Waller: At necropsy, the pericardial sac was distended and firm, containing 300 cc of blood (tamponade).

External examination of the ascending aorta disclosed extensive adventitial hemorrhage with a large sinus of Valsalva aneurysm which had ruptured (*Fig. 1*). The sinus of Valsalva aneurysm involved all three sinuses (fusiform aneurysm) with a maximal diameter of 6.8 cm. The tubular portion of ascending aorta was normal with a diameter of 3.2 cm. The excised heart weighed 520 gm (normal 400 gms). The aortic valve was congenitally bicuspid with fusion of 1 of 2 commissures, diffusely fibrotic, and contained a moderate amount of calcium (*Fig. 2*). An echocardiogram cut of the heart disclosed symmetrical hypertrophy of the left ventricular walls, which were free of necrosis and fibrosis. The anulus of mitral valve was dilated at 11.5 cm (normal 9.5) and the leaflet area increased producing leaflet prolapse (floppy mitral valve).[5] The tricuspid valve anular circumference and leaflet area were also mildly increased (floppy tricuspid valve).[6] Histologic sections of the aorta disclosed marked fragmentation and loss of medial elastic fibers with replacement by mucoid-staining filler material.

Pathologic Diagnoses:

1. Marfan cardiovascular disease without the Marfan syndrome:

a) Ruptured sinus of Valsalva aneurysm producing pericardial tamponade;

b) Cystic medial degeneration ("necrosis") with thinned aortic media containing abnormal elastic fibers and mucoid-filler material;

c) Mitral valve prolapse (floppy mitral valve);

d) Tricuspid valve prolapse (floppy tricuspid valve).

2. Aortic valve stenosis from calcified congenital bicuspid aortic valve.

Comments: A variety of lesions have been described in the aortae and hearts of patients with the Marfan syndrome?). Cardiovascular abnormalities are the most common cause of death in these patients and can be subgrouped as follows:

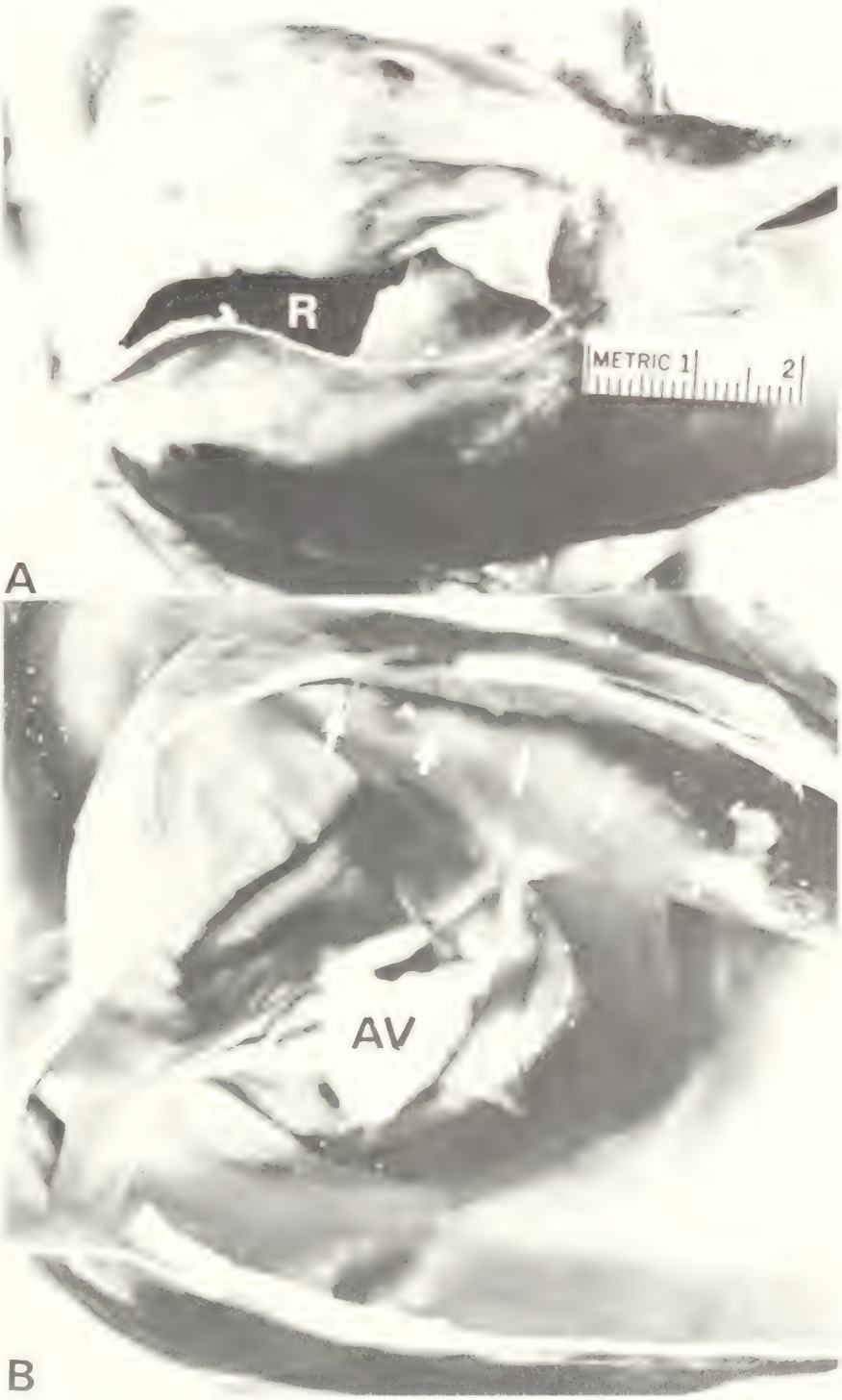


FIGURE 3: A—View of sinus of Valsalva aneurysm from above showing large aortic tear.
B—Roof of the aneurysm is removed showing lengthy intimal-medial tear (arrows) and congenital bicuspid aortic valve (AV).

a) fusiform ascending aortic aneurysm (sinus of Valsalva aneurysm with or without aortic regurgitation and with or without aneurysm rupture) associated with cystic medial degeneration;

b) aortic dissection;

c) isolated mitral regurgitation with floppy mitral leaflets and markedly dilated mitral anuli.

Although patients with the Marfan syndrome generally have abnormalities of other systems (bones, joints, eyes), occasionally the cardiovascular lesions of the Marfan syndrome are observed without other systemic features. This group of patients has been classified in the category of "Marfan cardiovascular disease without the Marfan syndrome."[8] The present patient appears to fall into the latter group having several of the features of Marfan cardiovascular disease (fusiform ascending aortic aneurysm with rupture, cystic medial degeneration of aortic wall, and floppy atrioventricular valves) without associated skeletal or ocular changes and no family history of the Marfan syndrome.

The present patient also illustrates one of several congenital cardiovascular lesions which may be clinically "silent" until adulthood (*Table*). Of these nine conditions, floppy mitral valves and congenitally bicuspid aortic valves are the most common lesions (5-10% and 1-2% incidence, respectively).[9,10] Congenital cardiovascular abnormalities which may remain clinically "silent" until adulthood consist of *improperly formed tissue* (arteries, valves, myocardium; #1, #2, #7, #9), *absent tissue* (defects; #5, #8), *excess tissue* (obstruction; #3, #4), or combinations of these tissue abnormalities (#6). The abnormal tissue functions normally, or almost normally, at birth and during the early decades of life, but later causes cardiac dysfunction and becomes clinically recognized.[11]

TABLE

Congenital Cardiovascular Lesions Clinically "Silent" Until Adulthood

1. Floppy atrioventricular valves (mitral) valve prolapse, tricuspid valve prolapse)
2. Bicuspid aortic valve
3. Hypertrophic cardiomyopathy
4. Discrete subaortic stenosis
5. Sinus of Valsalva aneurysm
6. Marfan cardiovascular disease
7. Ebstein's anomaly of tricuspid valve
8. Atrial septal defects
9. Anomalous origin of coronary arteries

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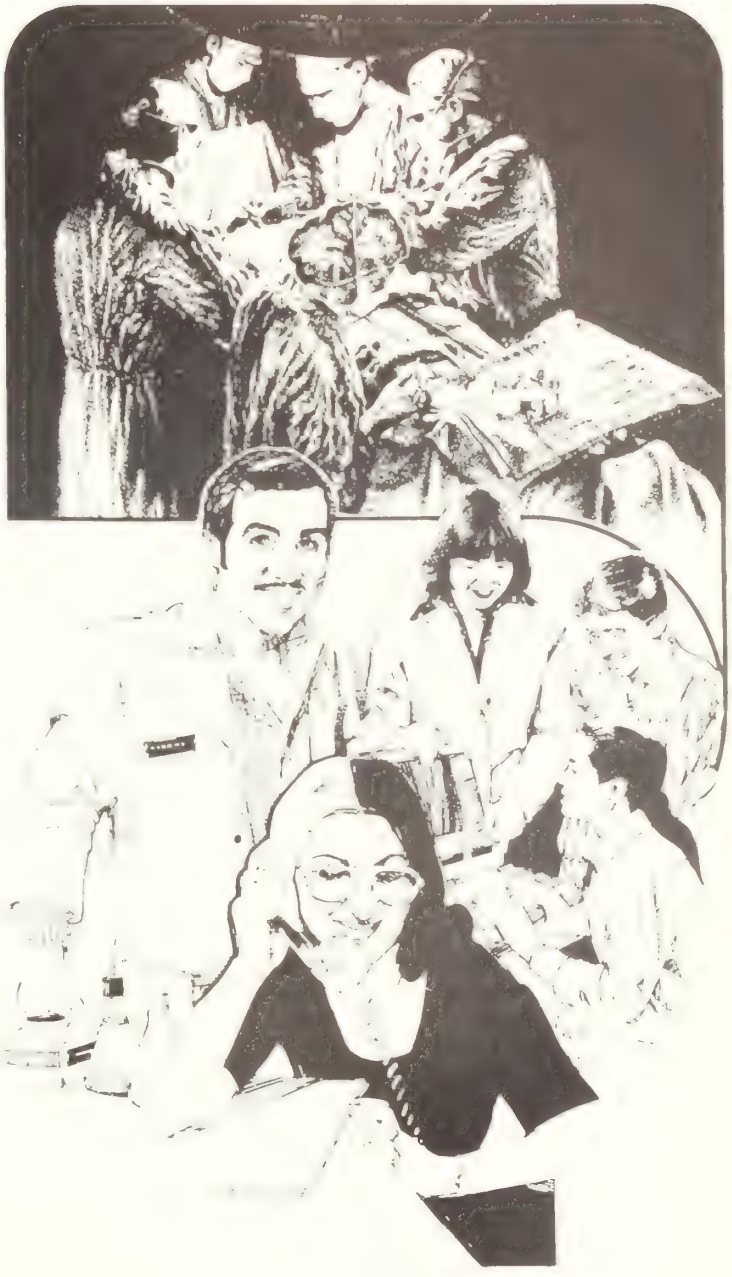
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Medicine's Lighter Moments

THE MOUSE

TED L. GRISELL, M.D.
Indianapolis

THE PROBLEM WITH medical students in the '30s was that the Great Depression created a shortage of money and practically all of us in medical school at that time had to be employed by one means or another in order to keep body and soul together. During this time, I was required to work at a small mental hospital on the east side of Indianapolis, the location of the Indiana University School of Medicine.

The hospital was operated by two older women physicians who were two of the first women graduates from the I.U. School of Medicine. Their names were Dr. Mary and Urbanna Spink. Our duties at that time consisted of attending small wards of psychiatric patients, most of whom were schizophrenic; some had Alzheimer's Disease. They were rather bizarrely agitated individuals whose predictability was totally impossible.

During that time, three of us lived in a small room in the old building that had been designed in the late 1880s as a hospital. For those medical specialists who are reading this report, it contained one of the very few Lister surgeries in the United States. A Lister surgery consisted of an operating room with carbolic acid spraying devices located close to the ceiling in order to sterilize the room and room air and free it from bacteria.

Our quarters consisted of a room with a 15-foot ceiling, a skylight for ventilation and a large door with a transom window for illumination. With the lights out, the only illumination in the room was transmitted from the hallway, through the transom's frosted glass. There was, of course, no air conditioning in those days, and that room became dreadfully warm in the hot summer months. It was necessary for us to work the year 'round in order to secure the position which consisted of room, board and laundry, thereby reducing the cost of maintenance of our education.

During one particularly hot night, the three of us were sleeping in the room in the nude because of the heat. Suddenly, in the middle of the night, I received a stabbing pain in the little finger of the right hand that was dangling over the edge of the bed. This caused an involuntary spasm which caused the object that had bitten me to fly from my finger into a large metal waste basket.

Since I was so rudely wakened, I peered into the waste basket in the half light coming through the transom, and discovered a mouse had been the culprit. The mouse had bitten the finger and ended up in the round waste basket. Since it was a large, metal-type basket with slick sides, the mouse was unable to escape.

In a desire to gain retribution for the damage created by the bite, I slipped on one shoe, poised my foot over the



waste basket until the mouse was still, then jammed my foot into the basket to crush the mouse. Unfortunately, the tapering of the basket permitted my foot to descend until it was about two inches above the mouse—and then my foot was lodged in the waste basket.

The mouse now had a very satisfactory means of climbing out of the waste basket, up my hairy leg. This created consternation on the part of the leg and body attached and, with an outcry or two, an attempt was made to shake the waste basket from the foot. This awakened my two roommates.

Imagine having been brought up in the environment of agitated patients, and in the half-light of the transmitted hallway illumination, my roommates immediately jumped to the conclusion that a mental patient had somehow gotten into their bedroom.

The next thing I knew, I was sitting on the floor with them sitting on my chest, the waste basket still attached to my foot. The mouse had managed to scamper away. Apparently, his tales to his friends in the old mental hospital were sufficiently disturbing as no mouse ever re-entered our room again.

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An Explanatory Note From the Author

"Medicine's Lighter Moments" is a new series that I hope will bring back memories, both pleasant and heart rending.

Not too many years ago, a project of this sort entered my mind as a way to occupy the few minutes that one spends in the "watercloset" chamber. This series should enable the person who is occupied in a sedentary position to have something that will stimulate his mind and maybe make those moments a shade more educational and enjoyable. On this premise, these articles have been written.

Unfortunately, due to the vagaries of publication, only one article per month will be offered. That may be enough. If you enjoy them, I hope you will let us know. If you find them boring, let us know. If you have no interest either way, let us know.

With best regards to all my friends—**Ted L. Grisell, M.D.**



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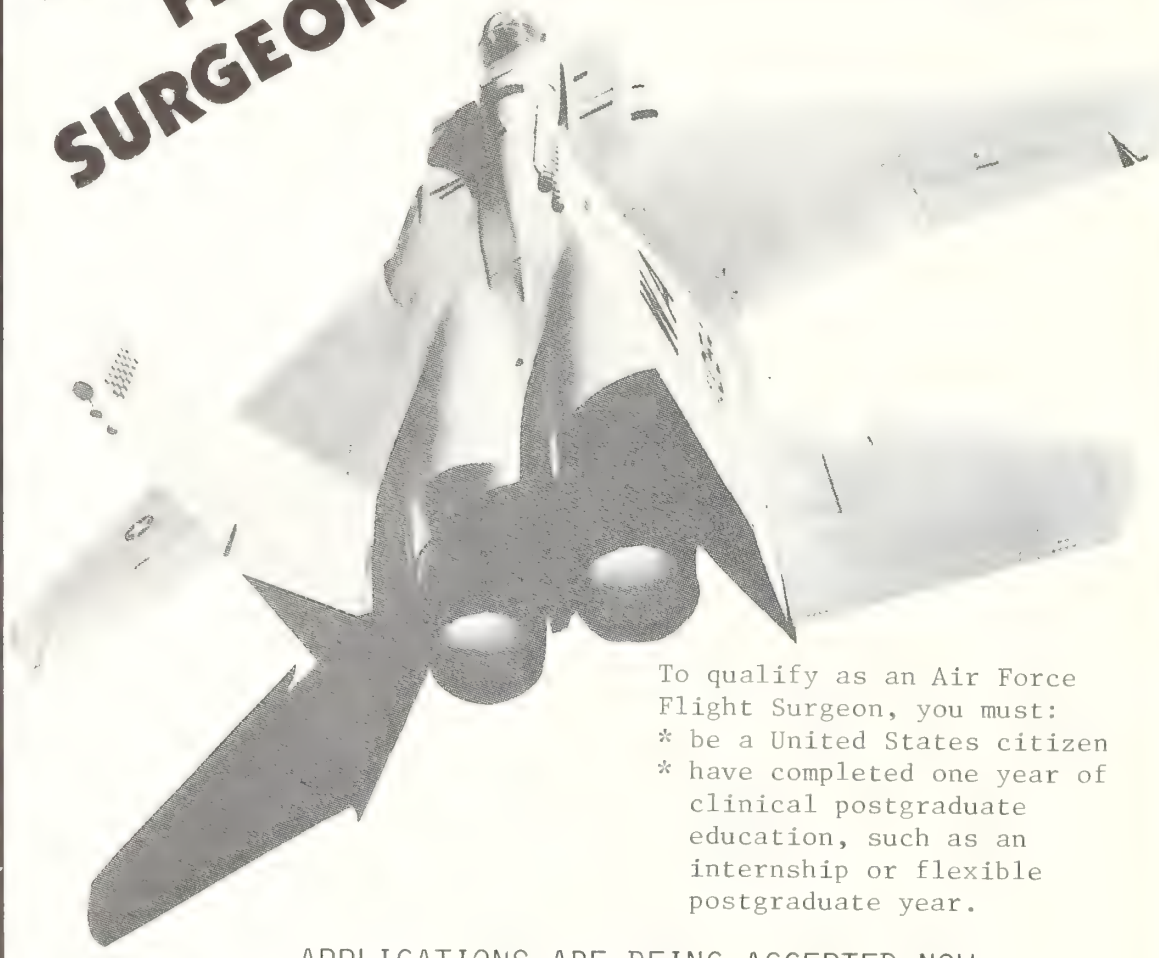
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Survey of Blood Transfusion Practices in Indiana

LEONARD I. BORAL, M.D.
Indianapolis

DURING THE SPRING of 1985, the Indiana State Medical Association and the Indiana Association of Pathologists jointly formed a Task Force charged with the goal of reviewing transfusion practices in Indiana and finding a mechanism to broaden the knowledge of Indiana physicians in the area of current transfusion practice. One of the first actions of the initial members of the Task Force was to expand the Task Force's size. The expansion was intended to insure representation on the Task Force of two groups of individuals. The first group included members of clinical specialties utilizing significant quantities of blood and/or blood products. These specialties are anesthesiology, family practice, general surgery, hematology-oncology, neonatology, obstetrics-gynecology, and orthopedic surgery. The second group included physicians, primarily pathologists, who are active in blood banking. While the size of the group made it more difficult to meet, the variety of medical specialties represented was intended to result in a more complete assessment of current transfusion practices.

Over the past year, this group has met on several occasions to attempt to develop consensus statements regarding certain transfusion practices felt to be somewhat controversial. The conclusions are to be published in two sections. The first, this article, will review the results of a survey of blood banking practices of Indiana hospitals and offer current views by the Task Force on certain of these practices. The second, to be published in the near future, will include immunohematology topics of special interest to each of the clinical subspecialties.

The first step of the Task Force was to perform a survey of the transfusion practices within the state. Questionnaires were addressed to the Chief of the Medical Staff or the Medical Director of the Blood Bank and sent to each of the 131 member hospitals of the Indiana Hospital Association. This could have resulted in some bias since the responses may reflect the impressions of an individual rather than objective information. Some of the questions related primarily to physician practices while others related to the blood banking practices of the hospital. Seventy responses were received. Five of these were from mental hospitals where no blood products were used. The results of the remaining 65 hospitals are listed in the *Table*.

The rest of this article will present information and Task Force opinion about proper transfusion practices polled in the questionnaire. Some of them will be considered in more detail in the next article.

Questions 1, 2 and 3—Hospital size:

For the purpose of this survey, a small hospital was defined as up to 99 beds, a medium-sized hospital as 100-399 beds, and a large hospital as 400 beds or more. Question 2 was used to further delineate the sophistication of the hospital. Question 3 was used to see which organization's blood bank standards were being followed.

Questions 4 and 5—Fresh blood:

From the survey, it appears that physicians at a number of hospitals require blood less than 24 hours old. "Fresh blood" is a poorly defined term. To some individuals it implies blood less than four hours old, to others blood less than 24 hours old, and to still others as blood which is less than a week old. The 1985 edition of *General Principles of Blood Transfusion*, published by the AMA, does not recognize a product called "fresh blood." In actual practice, blood less than about eight hours old is not available due to donor sample and pretransfusion testing requirements. There are very few differences between blood stored for eight hours and blood stored for seven days. The next article will contain a more detailed discussion of the biochemical changes which occur during blood storage.

The platelets in "fresh blood" have been exposed to storage temperatures of 1-6°C for several hours and therefore are, at best, poorly functional. Platelets have the greatest viability when separated from whole blood within six hours of collection and stored at 20-24°C (room temperature) for up to five days depending on the type of plastic bag used. Red cell enzyme 2,3 DPG, which is related to ease of oxygen dissociation from red cells to tissue, remains close to 100% for about a week in either packed cells or

Prepared by the Joint Blood Bank Task Force of the Indiana State Medical Association and the Indiana Association of Pathologists. This report has been approved by the ISMA Board of Trustees. Members of the task force appear on the next page.

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whole blood. Coagulation factors are best maintained in fresh frozen plasma which is separated within six hours of collection and stored at −18°C or colder for up to one year.

Question 7—"A" packed cells for an "AB" patient:

Several respondents indicated that group A packed cells would not be given to a group AB patient, which means that a hospital transfusion service, distant from its supplier, has to maintain units of AB blood which may outdate. Group A packed cells contain small amounts of anti-B plasma. This

anti-B will react with AB cells when in fused into a patient. The 75 ml. of plasma remaining in a unit of packed RBC will cause no problem when diluted into a normal adult's blood volume of 5,000 ml. Even 500 ml. of in compatible plasma infused into an adult patient would probably cause little if any overt clinical problems. The acute hemolytic reaction we are so concerned about preventing in blood transfusion rarely occurs unless the antibody is in great excess, i.e., when group A donor red cells are infused into a group O patient.

Questions 8 and 9—Rh positive blood for the Rh negative individual and conservation of Rh negative blood:

Several hospitals reported that their physicians would not use Rh positive blood in selected Rh negative patients, when Rh negative blood shortages occur. There is usually a shortage of Rh negative blood because of the stress put on the donor supply. O negative blood may be used in emergency cases prior to obtaining a blood type. O negative is the universal donor type and is transfused out of proportion to its supply in the community. For the overall community, some O negative blood must be conserved for emergency use by Rh negative women who are of child bearing age or younger to prevent their subsequent sensitization to the D antigen and the potential for later development of hemolytic disease of the newborn.

In order to accomplish this aim, older Rh negative patients who are not already sensitized to the Rh antigen (D) or who are not expected to need chronic transfusion should receive Rh positive blood when Rh negative blood is in short supply. This particularly applies to patients who are anticipated to have a large transfusion requirement over a limited period of time. About 20% of Rh negative individuals who receive Rh positive blood will not produce anti-D. Those who do will require Rh negative blood in the future. It takes about three months after exposure to Rh positive blood for an Rh negative person to produce anti-D. Rh negative blood should be reserved for Rh negative patients and not given to Rh positive patients unless outdating its imminent or when an emergency situation exists and uncrossmatched blood is needed immediately.

Questions 10 and 11—Washing of blood; leucocyte poor blood:

Leucocyte poor blood is indicated only when the patient has had two or more documented non-hemolytic, febrile transfusion reactions. This should account for less than 3% of the blood used. The survey shows that several hospitals are washing more than 10% of their blood units. This is an unnecessary expense and also increases the outdating of blood since after washing, the blood shelf life is reduced to only 24 hours, if not used. Washing blood will not remove the hepatitis virus. A cheaper method of providing leucocyte poor blood is the spin-cool-filter method which induces leucocytes to aggregate. These aggregates are then removed by a microfilter during the infusion.

Questions 12 and 13—Autologous and directed donations:

The acquired immune deficiency syndrome (AIDS) has resulted in significantly increased concern about the safety of blood and blood component transfusion by both the medical community and the public. Two measures used to increase the safety of blood are now required by the AABB, CCBC, American Red Cross and the FDA. The first is that blood centers educate each donor on AIDS and ask all donors in the high risk groups (homosexuals, hemophiliacs, intravenous drug abusers and the sexual partners of these individuals) to voluntarily refrain from donating. The second is that the human T-lymphotrophic virus-III (HTLV-III) antibody test be performed on each unit donated. While these approaches should greatly reduce the risk of AIDS transmission, it is not expected to be 100% effective in preventing AIDS transmission by blood and blood products.

Two other approaches, autologous donation and directed donation, need to be reviewed in terms of their role in reducing the risk of blood transfusion, including, but not limited, to AIDS transmission. Autologous blood is the safest blood one can receive since it is one's own. The Standards of the American Association of Blood Banks (AABB) allow patients to donate a single unit of blood for autologous use at intervals of several days provided the hematocrit remains 34% or higher and the anticipated need is at least 72 hours following donation. Consequently, a patient with a 43% hematocrit could donate four units of blood within about three weeks prior to anticipated surgery. This represents an excellent approach for providing the safest blood possible for patients undergoing elective surgery. The survey shows that autologous blood donations are not offered by the majority of hospitals, but hopefully this type of donation is available at the local blood center.

Directed donation is a separate matter. As the name suggests, directed donations are specifically directed for use by a specific patient. Only a few Indiana hospitals provide this type of blood donation. National blood banking organizations, including the American Association of Blood Banks, the Council of Community Blood Centers and the American Red Cross, have come out in opposition to directed donation for several reasons. First, significant stress may be placed on family members or friends to donate. This may result in a blood donation by individuals of high risk groups who would not normally donate but who would in this instance, rather than reveal certain aspects of their medical or social history to their family and friends. Second, in the event that an untoward reaction does occur, family relationships may be strained since the donor and recipient are known to each other. Furthermore, the recipient might even consider suing the donor (his identity is known to the recipient).

SUMMARY OF HOSPITAL SURVEY ON TRANSFUSION PRACTICES IN INDIANA

1. How many beds are there in your hospital?

Respondents:	Classification	No. of Hospitals	No. of hospitals with bassinets
Small	Up to 99 beds	22	13
Medium	100 - 399	33	18
Large	400 and over	10	8
Mental, etc.	(No blood used)	5	–
Total		70	39

2. Do you have a residency training program?

	Small	Medium	Large
Family Prac.	1	1	8
Internal Med.	–	–	4
Surgery	–	–	5
Pathology	–	1	5
None of above	21	20	

3. Are you accredited by:

	Small	Medium	Large
HCFA	5	7	2
JCAH	16	31	9
CAP	2	22	7
AABB	12	21	8

4. Do your clinicians feel there is anything "magic" in blood less than 24 hours old?

	Small	Medium	Large
Yes	2	1	1
A few	2	5	1
No	18	27	8

5. What is your clinician's definition of fresh blood?

	Small	Medium	Large
Under 24 hours	8	11	5
3 days	7	7	2
5 days	1	9	2
7 days	–	–	1
No consensus	6	6	–

6. What are your clinician's indications for fresh blood?

	Small	Medium	Large
Neonates	1	10	8
Open heart	–	3	7
N/A	10	14	2
Other	11	6	1

7. Will your clinicians use "A" packed cells for an "AB" patient?

	Small	Medium	Large
Yes	12	29	9
No	5	1	1
With persuasion	5	2	–
Never needed	–	1	–

8. Will your clinicians use Rh positive blood on an Rh negative individual older than 45 years when there is an Rh negative shortage?

	Small	Medium	Large
Yes	3	15	7
No	15	9	2
With persuasion	4	8	1
Never needed	–	1	–

9. Do you often transfuse Rh negative blood to an Rh positive patient?

	Small	Medium	Large
Yes	1	9	4
No	19	22	6
To prevent outdating	2	2	–

Do you return the Rh negative unit to your supplier to make it available for Rh negative patients?

Yes	18	24	5
No	2	7	4
N/A	2	2	1

10. What methods do you use to obtain buffy coat poor blood?

	Small	Medium	Large
Inverted spin	–	1	–
Cell washer	–	10	3
Frozen RBC	1	1	1

Cell washer and/or frozen spin/cool/ filter	1	6	1
Ask supplier	7	9	—
Not used	13	2	—

11. What percentage of blood is washed at your hospital?

	Small	Medium	Large
1-10%	4	8	7
10-25%	1	7	—
25-50%	1	5	2
Over 50%	1	1	—
N/A	15	12	1

12. How many "pre-deposit" autologous transfusions occurred at your hospital last year?

	Small	Medium	Large
None	21	23	3
1-5	1	10	2
6-10	—	—	3
11-15	—	—	—
Over 16	—	—	2

13. How many patients have received "directed donations" where the recipient selected donors known to him?

	Small	Medium	Large
None	21	29	4
1-5	3	4	4
6-10	—	—	2
Over 11	–	–	–

14. Is there a minimum hematocrit required for surgery?

	Small	Medium	Large
20 vol. %	—	1	—
25 vol. %	—	1	1
30 vol. %	13	13	9
Varies by M.D.	9	18	—

15. Is blood transfused for iron, B-12, or folate deficiency?

	Small	Medium	Large
Yes	13	5	3
No	7	18	5
If very anemic	2	10	2

16. Is FFP used as a volume expander or in the absence of a coagulation deficiency?

	Small	Medium	Large
Yes	5	27	9
No	17	6	1

17. Do you transfuse ABO incompatible platelets?

	Small	Medium	Large
Yes	5	17	9
No	16	10	—
If only choice	—	6	1
None used	1	—	—

18. At what levels do your clinicians begin transfusing platelets prophylactically in a leukemic?

	Small	Medium	Large
5,000	4	4	1
10,000	3	7	—
15,000	2	3	1
20,000	6	10	8
Higher	4	9	—
Not used	3	—	—

19. Do you routinely use a type and antibody screen with immediate spin crossmatch rather than the full crossmatch taken through to Coombs?

	Small	Medium	Large
Yes	3	1	2
No	19	32	8

20. If you find a M or Lewis A antibody reactive only below 37°C, will you transfuse only antigen negative blood?

	Small	Medium	Large
Yes	13	19	4
No	5	12	5
With per suasion	1	1	—
No cases	3	—	—
Crossmatch by supplier	—	1	—
Lewis – Yes; M – No			1

21. Are you or another physician knowledgeable in transfusion practice readily available at all times to address emergency blood transfusion problems?

	Small	Medium	Large
Yes	20	31	10
No	2	2	–

Third, this represents a return to an old blood banking philosophy where the individual patient was responsible for finding sufficient donors to make "deposits" to replace his "with drawals." The current philosophy is one of community responsibility where the community as a whole is responsible for the blood product needs of the patients. At present, there is no evidence which shows that "directed" donations are any safer than volunteer donor units from the general population.

Question 14—Minimum hematocrit for surgery:

A hematocrit of 30% is used as a minimum level acceptable for patients scheduled to receive a general anesthetic at several Indiana hospitals. There is little evidence to support this practice as a blanket policy. Instead, minimal acceptable hematocrit values need to be individualized. This individualization must take into consideration many factors including the etiology of the anemia, coexisting disease, anticipated surgery, estimated ability of the patient to compensate for the anemia, risk of transfusion and problems caused by delaying surgery to evaluate and treat the anemia. For some patients, such as the patient with chronic renal failure but good cardiovascular and respiratory systems who is scheduled for a minor extremity procedure, the acceptable hematocrit level may be significantly lower than 30%. For others, such as the patient with angina and aortic stenosis, the acceptable level may be significantly higher than 30%.

Question 15—Blood transfusion for iron, B12 or folate deficiency:

The survey shows that in a number of Indiana hospitals, blood transfusion is being used to correct anemia from mineral and vitamin deficiencies. Transfusion to an arbitrary hematocrit value (30%) is not indicated for the chronic anemia patient although transfusion may be indicated if the patient demonstrates severe cardiopulmonary symptoms. Blood transfusion can hamper the evaluation of anemia by altering laboratory findings. If the etiology of the anemia is found to be related to iron, B12, or folate deficiencies, specific treatment can be prescribed without introducing the risk of blood transfusion.

Question 16—Fresh frozen plasma:

Many Indiana hospitals reported that fresh frozen plasma (FFP) is used as a volume expander. FFP is a blood product which contains normal levels of all plasma procoagulants, except calcium. It also contains large quantities of citrate and can transmit infectious disease. The Consensus Development Conference on Fresh Frozen Plasma convened at the National Institutes of Health in September 1984 recommends FFP not be used for purposes of intravascular volume expansion. Other products including crystalloid fluids, dextran solutions, hetastrach, 5% albumin and purified protein fraction (PPF) can be used for volume expansion without introducing the risks of transmitting disease associated with FFP transfusion. Albumin and PPF are plasma derivatives, but both are heated to 60°C for 10 hours to inactivate viruses such as hepatitis and HTLV-III.

Question 17—ABO incompatible platelets:

ABO incompatible platelets are often the only platelet product available because of shortages of specific ABO types. Since there is minimal ABO substances on platelets, their survival is diminished only slightly, if at all. If infusion of incompatible plasma is a concern, as in the neonate, volume reduction of the pooled platelets can be accomplished. Platelets from Rh positive individuals often must be infused into Rh negative patients, because of the few Rh negative platelets available. The problem is the small number of red cells in the random donor platelet concentrate and not the platelets themselves, because platelets do not carry Rh antigens. The risk of possible Rh sensitization can be prevented by treating the patient with Rh immune globulin.

Question 18—Prophylactic platelet therapy:

The hospital survey shows that very few clinicians wait for a patient's platelet count to drop to 5,000 per microliter before initiating prophylactic platelet transfusions. Schlichter, *et al.* have shown that spontaneous bleeding from the gastrointestinal tract is of little concern until platelets are below 5,000 in aplastic anemia patients. The Seattle Group has therefore suggested that prophylactic platelet therapy in patients with uncomplicated severe thrombocytopenia should be instituted at about a 5,000 platelet count. Others are more conservative and use 10,000 as a lower limit. Those routinely using a value greater than 20,000 may well be instituting therapy sooner than the patient's condition warrants. However, leukemia patients often have severe thrombocytopenia complicated by sepsis, hypersplenism or disseminated intravascular coagulopathy (DIC), and these conditions often necessitate starting prophylactic platelet therapy at a higher platelet count (10,000-20,000). In the surgery/trauma patient, it is generally accepted that a minimum platelet count of 50,000 per microliter is desirable to provide adequate hemostasis.

Question 19—Immediate spin crossmatch:

A new method of providing compatible blood has been approved by the FDA and AABB. An ABO/Rh type and antibody screen taken through the Coombs phase should detect almost all unexpected antibodies and may be done on admission. Just prior to surgery, an immediate spin crossmatch can be performed. The immediate spin test verifies the ABO compatibility and detects high titer antibodies against low incidence antigens which may not have been on the screening cells but

are present in the donor unit. This modified crossmatch procedure can decrease the blood bank costs if implemented, but very few Indiana hospitals have initiated this new technique.

Question 20—Cold reactive antibodies: Many Indiana hospitals reported that patients with antibodies reactive only below 37°C (cold antibodies) should receive antigen negative blood. Antibodies that do not react at 37°C are considered nuisance antibodies by most knowledgeable immunohematologists because they are clinically insignificant. Therefore, if a cold antibody is discovered that is nonreactive in pre-warmed (37°C) testing, blood may be transfused regardless of its antigenic makeup.

Question 21—Availability of a knowledgeable blood bank physician: Blood transfusions have many risks. The field of immunohematology is highly specialized and some physicians who do not utilize blood regularly may not be well versed in its use or its risks. A physician with expertise in blood banking should always be available to the physician using blood in case any untoward reaction occurs. In some instances, the medical expert may be the hospital pathologist or he may defer this activity to a hematologist or to the blood bank physician of the local blood supplier. Most Indiana hospitals have access to such a specialist at all times.

In summary, the Task Force survey identified a wide spectrum of transfusion practices across Indiana. In some instances, the practice was not in accord with the modern knowledge and theories of blood banking. The Task Force consensus opinions are provided as guidelines to improve blood banking across our state and to promote the most efficient and least expensive methods of utilizing blood, which is such a precious resource.

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Look-Alike and Sound-Alike Drug Names

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Look-alike and sound-alike drug names can be misinterpreted by a nurse reading doctors' orders or by a pharmacist compounding physicians' prescriptions. Such misunderstandings can result in the administration of a drug not intended by the prescriber. Awareness of such look-alike and sound-alike drug names can reduce potential errors.

	PRAZEPAM	PRAZOSIN
Category:	Antianxiety agent	Antihypertensive
Brand Name:	Centrax, Parke-Davis	Minipress, Pfizer
Generic Name:	Prazepam	Prazosin HCl
Dosage Forms:	Capsules, Tablets	Capsules

	CALCITRIOL	CALCITONIN
Category:	Vitamin D therapy	Hypercalcemia
Brand Name:	Rocaltrol, Roche	Calcimar, Armour
Generic Name:	Calcitriol	Calcitonin-salmon
Dosage Forms:	Capsules	Injection



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CME QUIZ

TO OBTAIN ONE HOUR OF CATEGORY 1 AMA CME CREDIT, answer the following questions by circling the correct answer on the answer sheet below. Complete and clip the application form and mail it to: Indiana University School of Medicine, CME Division, BR 156, 1226 W. Michigan St., Indianapolis 46223.

Breast Cancer

CONTINUED FROM PAGES 587-592

1. Most patients with Crohn's disease have:
   a) Diffuse small bowel disease
   b) Only terminal ileal disease
   c) Ileocolitis
   d) Isolated colon disease
2. The most common symptom of ulcerative colitis is:
   a) Bloody diarrhea
   b) Abdominal pain
   c) Weight loss
   d) Fever
3. The most common extraintestinal manifestation of inflammatory bowel disease is:
   a) Nephrolithiasis
   b) Pericholangitis
   c) Growth failure
   d) Arthritis
4. All of the following statements about steroid therapy of IBD are true except:
   a) The goal of steroid therapy is to suppress active inflammation
   b) Steroids should be withheld in the presence of growth failure
   c) Alternate day steroid therapy is preferred when there is evidence of complete disease suppression
   d) An *Entamoeba histolytica* titer should be obtained prior to instituting steroid therapy
5. Patients with ileal Crohn's disease may have anemia secondary to:
   a) Vitamin B12 and/or folate deficiency
   b) Chronic disease
   c) Iron deficiency
   d) All of the above
6. The frequency of rectosigmoid colon involvement in UC is:
   a) 20%
   b) 50%
   c) 75%
   d) 95%
7. All of the following statements concerning radiographic barium studies are true except:
   a) Endoscopy should be performed prior to barium contrast studies since barium may alter the mucosal appearance
   b) An UGI and small bowel examination should be done as part of the initial evaluation of all suspected cases of IBD
   c) A barium colon study should be done as part of the initial evaluation of all suspected cases of IBD
   d) Barium may precipitate toxic megacolon in patients acutely ill with colitis
8. Endoscopic findings in UC may include all of the following except:
   a) Cobblestone appearance in a discontinuous pattern
   b) Pseudopolyps
   c) Punctate ulcerations and mucosal friability
   d) Diffuse edema, erythema, blurred vascular pattern
9. All of the following statements concerning diet and nutrition are true except:
   a) Breath hydrogen analysis is useful in identifying patients that malabsorb lactose
   b) Total parenteral nutrition is occasionally required when disease activity is severe
   c) A restricted diet has been shown to prevent recurrence of disease
   d) Malnutrition may be due to poor appetite, impaired absorption and increased nutritional requirements
10. Indications for surgical intervention include all of the following except:
    a) Abscess formation
    b) Bowel obstruction
    c) Elective colectomy 10 years after the diagnosis of UC
    d) Colonic narrowing in chronic UC

JUNE CME QUIZ Answers

Following are the answers to the CME quiz that appeared in the June 1986 issue: "Stages I and II Breast Cancer," by James G. Morphis II, M.D.

1. b	6. b
2. a	7. a
3. c	8. c
4. a	9. c
5. d	10. a

Answer sheet for Quiz: (Breast Cancer)

1. a b c d	6. a b c d
2. a b c d	7. a b c d
3. a b c d	8. a b c d
4. a b c d	9. a b c d
5. a b c d	10. a b c d

I wish to apply for one hour of category 1 AMA Continuing Medical Education credit through the I.U. School of Medicine. I have read the article and answered the quiz on the answer sheet above. I understand that my answer sheet will be graded confidentially, at no cost to me, and that notification of my successful completion of the quiz (80% of the questions answered correctly) will be directed to me for my application for the Physician's Recognition Award of the American Medical Association. I also understand that if I do not answer 80% of the questions correctly, I will not be advised of my score but the answers will be published in the next issue of INDIANA MEDICINE.

Name (please print or type)

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Identification number (found above your name on mailing label)

Signature

To be eligible for this month's quiz, send your completed, signed application before Aug. 10, 1986 to the address appearing at the top of this page.

EDITORIALS

The Cigarette Epidemic

The American College of Physicians has labeled cigarette smoking an epidemic. In fact, "the worst epidemic to ever affect the American people."

The College has joined with Surgeon General C. Everett Koop to denounce cigarette smoking and strive for a "smoke-free society" by the Year 2000.

Cigarettes are the largest cause of preventable death in the U.S. by far. Not only that, but cigarettes also cause some of the most horrible ways of dying, ruining health at first and then producing a slow decline and a highly uncomfortable demise.

Death by cigarettes makes a death at the scene of a head-on collision seem like a blessed event.

Cigarettes make the blunt advice of at least one physician sound like good old-fashioned common sense. "Your health is being affected drastically by tobacco usage. I advise you to stop smoking. If you do I would like to see you again in three months. If you don't stop smoking, don't come back."

The fact that many people make their living by growing or processing tobacco makes about as good an argument for continuing as a custom of rewarding murderers with cash bonuses.

For Non-smokers Only

The trustees of the American College of Cardiology have made a non-smoking policy for all College meetings and for Heart House, the College headquarters in Bethesda. Meeting rooms for all ACC-sponsored symposia, annual scientific sessions, committees and Board sessions will be smoke-free.

The College will encourage a non-smoking policy for members and ACC staff while they are representing the College at meetings of all types. Heart House will be smoke-free after July 1, '87. They also kicked out "smokeless" tobacco. And that's "NO SNUFF."



"Somehow, I pictured our date a little differently."

How to Eliminate 35% of All Cancer Deaths

"Cancer Screening: The Most Effective Cure" is the title of a new NCME telecourse that became available to 700 hospitals, medical centers and medical schools this month.

The American Cancer Society estimates that 35% of all the cancer mortality in the U.S. could be eliminated if proper screening procedures were practiced uniformly. Mammography in cancer of the breast, Pap smears in cancer of the cervix, and occult blood tests and colonoscopy when indicated are examples. Three big ones could, with widespread screening practices, be almost eliminated.

The NCME telecourses were established with the support of Roche Laboratories. Physicians who participate in the telecourse can qualify for two credit hours in Category 1 of the AMA and two prescribed hours from the American Academy of Family Physicians.

Research Grant Awarded

The Mayflower Group has awarded a $25,000 one-year grant to Dr. Sharon Andreoli, pediatric nephrologist at the Riley Hospital, to enable her to continue a study of endothelial cells in kidneys. The research is relevant to kidney damage and failure in children. Once the mechanism of injury is known, the possible prevention can be pursued.



Interferon Update

The Biogen Corporation of Cambridge, Massachusetts has been granted a patent to manufacture Gamma Interferon. The company plans to have the product available for its West German market by the end of 1986. It is to be used in the treatment of rheumatoid arthritis. A number of other centers in the United States, Europe, and Japan are studying this product in the treatment of both rheumatoid arthritis and renal cell carcinoma.

Alpha Interferon (Indron A), manufactured by the Schering-Plough Corporation, has been available since 1985. It may be effective in treating the common cold.

Alpha and Gamma Interferon are related but are distinctly different proteins that have demonstrated potential activity in certain immune systems. Hopefully, they will become helpful in the treatment of other viral infections and malignancies.

The Interferons are present in normal tissue, in such minute quantities that studies, in the past, have been virtually impossible.

The advent of the genetic engineering process now provides an adequate amount of these proteins for studies in many centers. Hopefully, they will provide another modality in the treatment of both viral infections and malignancies. — **I.E. Michael, M.D., Indianapolis**

Paying Attention to the Cost of Medical Insurance

Commentary

About three years ago Lincoln National Life Insurance Company added a fourth option for the medical insurance of the Indiana State Medical Association. This option was a $2,000 deductible plan with the insured paying 20% of the next $10,000. From that point on the company paid for everything. At that time the difference in premiums between this policy and the $500 deductible was negligible, and consequently, few members of the Association elected this option.

A little over one year ago the company shifted to "Age banding." The rates for the older members were increased substantially while the rates for the young were kept low. This seems reasonable since older members use more insurance. As a consequence, the rates for the 55 to 70 group have skyrocketed. Those who used to pay a premium of $1,385 per year for the $500 deductible policy now pay about $2,244 for the same policy. The $2,000 deductible policy only costs now what the $500 deductible previously cost, i.e., about $1,504 per year.

Most doctors pay little attention to the cost of their own medical insurance. They should. The difference in premiums for two years of good health might allow a family one deductible. Furthermore, doctors and their families are generally treated by their peers at no charge. If the money paid in a year exceeds 10% of income, it is deductible from income taxes.

So far, only 49 members of the Association have taken out the $2,000 deductible policy. It has been said that employees cannot afford the $2,000 it might cost to become ill. As an employer it might be wise to help cover part of the deductible. Premiums might be reduced enough to make it worthwhile.

The only viable alternative to eventual socialized medicine is a self-pay or a self-help type of policy. Medicare has not heretofore been insurance; it has been pre-paid medicine, which no one can afford—even the United States Government. If all of our patients had a deductible of $500 to $1,000 with an 80/20 copayment for the next $1,000 to $2,000, then there would be few unnecessary emergency visits for x-rays or CAT scans. There would be a great deal of down-to-earth talking between doctors and patients about what some tests are and just how important they are. When a patient finds out that a CAT scan is being ordered to keep from making a mistake causing legal liability, he is more likely to share the risk and not have the test just yet. The same is true of hospitalization and all of the other expensive things in medicine. If the patient has to pay as he goes, he will monitor costs better than any DRG or HMO. Then hospitals will compete with each other by cutting costs. (Have DRGs had any real effect on costs?) Doctors will also compete by cutting prices—better than any HMO. This is what we want—a system in which the patient shares both costs and medical decisions.

'If deductible insurance is good for the country and good for medicine, then it is good for us.'

If deductible insurance is good for the country and good for medicine, then it is good for us. Doctors should be leaders, not followers. It is time we started being positive instead of passive.

How long has it been since you checked your medical insurance policy?—**John Lanman, M.D., Munster, Ind.**

CAT Scan

Commentary

In many of the larger hospitals and in many of the medical journals, the computed axial tomogram is called a "C.T." and that's all right. This term will probably last for a while.

At a more earthy level this study is called a "CAT Scan," and I predict that this term will be more widespread and last longer—at least in the United States of America.

We Americans instinctively go for the shorter, faster flowing words when we express ourselves. "CAT" is a smooth acronym—like "SALT" in "SALT Talks." "C.T." has a hesitation because of the periods and because it doesn't have a vowel.

And "cat" is so fundamental in our minds; we start learning to spell and write with this word and similar two- and three-letter words in the first grade.

Finally, for those who like precision, "CAT Scan" is better most of the time. Over 90% of the computed tomograms are AXIAL x-ray tomograms, not frontal nor sagittal tomograms. "CAT" says it cleanly and briefly; it most closely abbreviates the computed axial tomogram, and that's what we're talking about most of the time. If someone is talking about a relatively rare sagittal, frontal, or some other type of reconstruction of x-ray absorption data by a computer, why let him use "C.T." That would be more appropriate then.

But for everyday work, give me the CAT.—**Richard J. Noveroske, M.D., Newburgh**

Help for Downs Victims

Downs Syndrome children may be aided by facial plastic surgery, according to an Israeli article quoted recently in the U.S. When performed as part of a comprehensive developmental program which includes speech therapy, special education, and increased socialization and family interaction, the child may be more effectively integrated into society.

Because of their similarity in physical appearance, the victims of Downs Syndrome tend to be considered uneducable and untrainable, and have remained at a low functional level. With surgical correction of facial characteristics they may be raised considerably in their adaptability to normal living.



AUXILIARY REPORT

Alfrieda Mackel (Mrs. Frederick)
ISMA Auxiliary President 1986-87

As president of the ISMA Auxiliary this past year, I was privileged to be a guest during several outstanding county programs. I would like to share some of these programs with you. They indicate the talent and versatility your auxiliaries use to meet the needs of their members and their communities.

Several county auxiliaries have social programs, with their physician spouses as their special guests. Because of the pressures and problems faced daily by physicians, these informal parties provide a welcome opportunity to socialize and get acquainted. **Vigo County** entertained their spouses with a "Bring in the Clowns" circus theme party complete with popcorn, balloons, circus music and, of course, clowns. **Lake County-Hammond** asked for a voluntary donation of $25 and a board game to attend their holiday party for spouses; the total proceeds from this donation was $1,830, which was given to the Salvation Army for the Christmas needy. The board games were donated to the Salvation Army Gift Center.

Knox County Auxiliary held a Mardi Gras Ball to which the community was invited. The $8,000 profits were dispersed to the Knox County Association for Retarded Citizens, Lincoln Trail Hospice, Harbor House, and Children and Family Services.

Floyd County Auxiliary has an annual "Day at the Races" at Churchill Downs the Wednesday after the Derby. Making use of this local attraction, Floyd County auxilians sell $25 tickets to 200 guests who attend the race, sit in the clubhouse, and enjoy a buffet dinner. Proceeds go toward maintenance of an ongoing pediatric playroom project, hospice, Life Line, dyslexia, Safe Sitters Hedden House, mental health, and family services of United Way in their local area.

Grant County arranged for their president-elect, Rod Ashley, and his spouse, Dr. Susan Rodgers Ashley, to present a program on stress and relaxation. Sensitive to the needs of their members, **Wells, Wayne-Union** and **Owen-Monroe Counties** all had programs on stress management.

County Auxiliaries Meet Needs of Their Members and Communities in a Variety of Imaginative Ways . . .

To encourage mothers of young children to attend morning meetings concerning facilities in Evansville for children needing care for drug abuse, **Vanderburgh County Auxiliary** arranged for babysitting at a local church.

Delaware-Blackford Auxiliary works with several community organizations in Muncie to financially and personally support a hospitality house. This is a house where family members can stay for a small fee (or free) if referred by a physician while a family member is hospitalized at Ball Memorial Hospital.

Tippecanoe Auxiliary holds an auction each December of member-donated homemade Christmas cookies, cakes and candies. This year their money was given to a local boys home that had an emergency need for mittens, hats and scarves.

The **Owen-Monroe County Auxiliary** is a main contributor to the Bloomington Festival of Trees. This year, the auxiliary decorated a Christmas tree with handmade ornaments and miniature lampshades on electric candles. The tree was auctioned for $3,800. Benefits from the Festival of Trees went to the Bloomington Hospital to help establish a heart catheterization department.

Allen County benefitted from a program given by one of its members who shared her experience with breast cancer, its detection and surgery. This woman brought her surgeon and his nurse to explain the medical technology used in her case.

There are 35 county auxiliaries in Indiana. Membership in the ISMA Auxiliary is 2,600 and the figure increases daily. County auxiliaries vary in size from six to 433 members. Some meet once a year and others have nine meetings a year. All are organized to serve their county medical societies, the ISMA and the AMA. Auxilians are your greatest admirers and your constant supporters. They will serve you to improve the quality of life for all people in their communities, the state of Indiana, and the United States.—**Muriel Osborne, Immediate Past President**

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NEWS NOTES

Lederle to Continue DTP Distribution

After considerable review, Lederle Laboratories, a division of American Cyanamid Company, has announced it will continue to supply DTP vaccine despite expiration of its insurance on June 30.

Robert B. Johnson, president, said the company would have no replacement coverage for DTP, an essential childhood vaccine that protects against diptheria, tetanus and pertussis.

"Lederle has been the only company to provide an uninterrupted supply of DTP vaccine during the last 40 years," Johnson said. "Because of our long-standing commitment to vaccines, we will make every effort to assure the nation's children are not deprived of this important protection."

Mr. Johnson said that to cover the liability exposure the company would face following expiration of its insurance on the product, the price of the vaccine will be increased to $11.40 per dose from the current price of $4.29. The new price includes $8 for product liability reserve.

"The price increase is due entirely to the claims situation," Mr. Johnson said. "It is required to self-insure the company for future liability exposure. It is the only way we can remain in the market." He said the new price is based on the projected trend of the size of the awards and number of claims associated with its vaccine.

'Health, Happy and Wise' Wins First Place Award

"Health, Happy and Wise," the ISMA's public education television series for senior citizens, has won first place in regional competition sponsored by the Fort Wayne Chapter of the International Association of Business Communicators.

The ISMA series won the award in the non-profit video series category.

Dr. Shirley Khalouf, ISMA president-elect, accepted the award on behalf of the Association during a ceremony in Fort Wayne May 27.

Peer Review Committee Proceedings Privileged

Provisions of the Peer Review Act on the confidentiality of committee proceedings applied in an action by a physician challenging a hospital's adverse decision on recredentialing him, an Indiana appellate court has ruled.

The physician filed an action against the hospital seeking court review of its adverse recommendation concerning his recredentialing. The hospital sought an order directing that no one be permitted to give testimony concerning any proceedings of the peer review committee or its recommendation. The hospital based its request on the confidentiality and privilege of peer review committee proceedings found in the Peer Review Act. A trial court initially granted the motion, but vacated its ruling on reconsideration.

On appeal, the appellate court said that the confidentiality and privilege provisions of the Act did apply in the physician's action challenging the private hospital's decision on his surgical privileges. The confidentiality provisions were clear and unambiguous and clearly applied to the physician's action. The confidentiality provisions were not limited to medical malpractice actions, as the physician had argued. The court reinstated the trial court's original order granting the hospital's motion to preclude testimony on the peer review committee's proceedings.—*Parkview Memorial Hospital, Inc. v. Pepple*, 483 N.E.2d 469 (Ind. Ct. of App., Oct. 2, 1985) (Courtesy of The Citation, April 15, 1986)

Here and There . . .

Dr. Suzanne B. Knoebel of Indianapolis received the Distinguished Fellowship Award of the American College of Cardiology at the College's recent convocation ceremony.

Dr. Thomas G. Slama of Indianapolis, a specialist in infectious diseases, has been elected to fellowship in the American College of Physicians.

Dr. George F. Rapp of Indianapolis is the newly elected president of the Mid-American Orthopaedic Association, an organization serving 1,050 members; its next annual meeting will be in Del Coronado, Calif., in March 1987.

Dr. Frederick B. Stehman of Indianapolis presented the Ob/Gyn Grand Rounds at the University of Louisville recently; he discussed "New Approaches to Cervical Cancer."

Dr. Michael E. Pauszek, a Franklin internist, has been elected to fellowship in the American College of Physicians.

Dr. Charles H. Caylor of Bluffton, president of the Caylor-Nickel Medical Center, has been awarded membership in the American College of Physician Executives.

Dr. Frederick A. Tolle of Indianapolis has been elected to fellowship in the National Medical Society.

Dr. John C. Johnson, director of Porter Memorial Hospital's emergency department, addressed the main body of the International Conference on Emergency Medicine, held in London this spring.

Dr. James S. Frasure of Bloomington was guest speaker at a recent meeting of the Just Say No Club at Edgewood Junior High School.

Dr. Thomas G. Rousseau of Martinsville discussed cancer prevention at a public meeting in May at Morgan County Memorial Hospital.

Dr. John W. Fehrenbacher of Indianapolis discussed cardiac transplants at a recent meeting at Witham Memorial Hospital in Lebanon.

Dr. David S. Batt of Indianapolis and **Dr. Robert K. Foley** of Princeton discussed "Arthritis: Fact vs. Fiction" during a public forum at Gibson General Hospital in Princeton.

Dr. Silvio A. Garcia of Indianapolis was guest speaker at the recent annual meeting of the Cancer Society of Huntington County.

Dr. Robert O. Zink, a Madison family physician 40 years, has retired from practice; he was one of the founders of the Madison Clinic, which opened in 1950.

Dr. Suresh K. Joishy of Bloomington was guest speaker at a recent meeting of the Owen County Cancer Society.

Dr. Emil F. Grabow, chairman of the executive committee of the Hammond Clinic, has been awarded membership in the American College of Physician Executives.

Dr. Melvin L. Hirsch of Dyer recently conducted a community awareness program on Alzheimer's disease.

Drs. Frank J. Amodio and **Arthur Bentsen** of Evansville participated in a discussion on asthma and allergies during a recent community health forum.

Dr. Joel H. Griffith of Bloomington served recently as a panelist during an "Eating Disorders Workshop" sponsored by the Mental Health Association of Monroe County.

Dr. Hans R. Wilbrandt, an Indianapolis ophthalmologist, discussed a new method of eye surgery for cataract patients at the May meeting of the Franklin Rotary Club.

Dr. Richard Pitman of Columbus, chief of radiology at Bartholomew County Hospital, has been named president-elect of the Indiana Roentgen Society.

Dr. Max S. Norris of Indianapolis has been named chairman of the board of Fairbanks Hospital.

Physician Recognition Awards

The following ISMA physicians are recent recipients of the AMA's Physician Recognition Award. This award is official documentation of Continuing Medical Education hours earned, and is acceptable proof in most states requiring CME in re-registration that the mandatory hours of CME have been accomplished.

Adler, Fred, Munster
Aeschliman, William J., Fort Wayne
Akin, Emel B., Evansville
Allen, Deborah I., Indianapolis
Arney, Amos, Michigan City
Bankoff, Milton L., Michigan City
Bastnagel, William F., Indianapolis
Batterton, Owen A., Bloomfield
Beardsley, Frank A., Frankfort
Beck, Gary L., Evansville
Benedict, Harold G., Anderson
Black, Kenneth A., Portage
Black, M.J., Brownsburg
Blix, Fred M., Zionsville
Brechtl, Harvey J., South Bend
Cabrera, Pelayo B., East Chicago
Campagna, Edward A., East Chicago
Cespedes, Carlos A., Griffith
Chun, Bonnie C., Fort Wayne
Clarkson, Clarence G., Richmond
Clutter, Robert E., Indianapolis
Cohen, Irving, Plainfield
Conrad, Henry W., Lawrenceburg
Csicsko, John F., Fort Wayne
Dew, Daniel C., Elkhart
Doles, Ted S., Muncie
Duque, Fausto, Jeffersonville
Ellis, William N., Indianapolis
Emerson, Quentin B., Fort Branch
Estacio, Romeo Y., Munster
Ferguson, Philip C., Wabash
Fields, Max L., Monticello
Frederick, Terry L., Carmel
Gohil, Jivanlal P., Kokomo
Gomez, Cesar M., Hammond
Greico, Vincent M., Elkhart
Griep, John A., East Chicago
Gries, Richard L., Haubstadt
Gupte, Subodh S., Marion
Haas, Ray A., Greenfield
Haley, Alvin J., Indianapolis
Han, Sangho, Munster
Harris, James J., Fort Wayne
Hastings, Richard A., Elkhart
Hathaway, Clayton B., Auburn
Hehemann, William V., Munster
Hirschauer, Jeffrey S., Fort Wayne
Huss, Richard G., Muncie
Kacmar, Joseph A., Crown Point
Kammeyer, William A., Fort Wayne
Kanuru, Durga R., Munster
Kelley, William E., Mooresville
Kim, Young M., Schererville
Klutinoty, George, Carmel
Kolettis, John G., Merrillville
Lee, Chung-Seng, Fort Wayne
Lee, Shui-Shih S., Fort Wayne
Leech, William H., Crawfordsville
Lievertz, Randolph W., Indianapolis
Mayrose, Richard S., Terre Haute
McAfee, George J., Greenwood
Miller, Donald C., Cedar Lake
Mitchell, Georgia B., Gary
Mohrman, Michael S., Fort Wayne
Mouser, Robert W., Indianapolis
Myers, Woodrow A., Indianapolis
Penn, Robert A., Lake Station
Perkins, Stephen W., Indianapolis
Petry, Thomas N., Delphi
Philbrook, Seth A., LaPorte
Powers, William R., Lyons
Pulcini, John D., Evansville
Rains, Daniel P., New Castle
Raju, Gopal S., Marion
Records, John M., Franklin
Reidy, James E., Mishawaka
Ringer, William A., Williamsport
Roller, Mac C., Franklin
Rudser, Donald H., Whiting
Rumana, Robert H., Bluffton
Rutt, Carl N., Elkhart
Saddawi, David N., South Bend
Salomon, Jaime A., Indianapolis
Shelton, N.P., Vincennes
Shetty, Dayananda M., Munster
Sidell, James P., New Haven
Smyrniotis, Frank E., Marion
Snell, Alan D., South Bend
Spellmeyer, John C., Richmond
Subhasiriwatana, Man, Crown Point
Ulgado, Edmundo S., Connersville
Wagner, Richard W., Huntington
Ward, Robert A., Tell City
Weida, Jerry M., Lafayette
Weinberg, Benjamin A., Whiting
Wesemann, Merrill M., Franklin
Young, Joseph W., Franklin
Zahrt, Frank H., LaPorte
Zallen, Stanley G., Munster
Zent, Don P., Kokomo

NEWS NOTES

For the Asking . . .

• **"Sugars and Your Health"** is the title of a 32-page pamphlet published by the American Council on Science and Health. One of the conclusions in the report is that "sugars are not harmful to health when consumed in the amounts that have been customary in the U.S. for the past 50 years, except for the role that they and other carbohydrates play in promoting tooth decay." Another pronouncement is, "Obesity doesn't result from eating sugar; it results from taking in more calories than you expend." Also, "Although the average sugar intake of Americans is not detrimental to their health, some people would be well advised to cut back on high-sugar foods that provide few essential nutrients." A balanced diet is of utmost importance. For a copy, send a SASE (#10, 66¢ postage) to Sugar Report, ACSH, 47 Maple St., Summit, N.J. 07901.

• **"About Your Medicines,"** a book published by the USP, is now revised and updated. It is written for the patient and answers all the questions patients have about their medications, such as: what to do if a dose is missed; whether foods, alcohol, aspirin or other drugs can be used with the particular medicine; how the medicine will affect the patient; and how it should be stored. It is sold at $5.95 per copy by the USP. Send check or money order to U.S. Pharmacopeial Convention, Dept. of Professional Affairs, 12601 Twinbrook Parkway, Rockville, Md. 20852.

• **Four books on sexual abuse** have been published by Learning Publications, Inc., P.O. Box 1326, Holmes Beach, Fla. 33509. They are: *Sexual Abuse: Causes, Consequences and Treatment of Incestuous and Pedophilic Acts* by Adele Mayer, hardcover, $19.95; *Incest: A Treatment Manual for Therapy with Victims, Spouses and Offenders* by Adele Mayer, softcover, $17.95; *Children of Alcoholics* by Robert J. Ackerman, a guidebook for educators, therapists and parents, softcover, $9.95; and *Child Abuse and Neglect* by E.L. Erickson, A.W. McEvoy and N.D. Colucci Jr., a guidebook for educators and community leaders, softcover, $14.95.

• **Financial Aid Finders** of Randolph, N.J. reports that, despite the dearth of loan money for medical students and the shrinkage of government aid, there is still more than $8 billion in private source awards. Many awards are tied to specific career fields, while others cut across all interest areas. Their listings cover undergraduate, graduate and overseas study. The address is 77 Gristmill Road, Randolph, N.J. 07869.

• **The Leukemia Society of America** is now accepting applications for 1987 grants to encourage research at both the basic science and clinical levels in the fields of leukemia and related diseases. The deadline is Sept. 2, 1986. Write Research Grant Coordinator, Leukemia Society of America, 733 Third Ave., New York, N.Y. 10017.

• **"About Your High Blood Pressure Medicine,"** a lay language guide to medicines for high blood pressure, has been published by The United States Pharmacopeial Convention, in a revised and updated paperback edition. $6.95. Send check or money order to USP Order Processing Dept., 12601 Twinbrook Parkway, Rockville, Md. 20852.

• **"Let's Play to Grow"** is a play and recreation program for children with disabilities and their families, created by the Joseph P. Kennedy Jr. Foundation. A new guide, just published by LPTG, presents a solution, offering hundreds of illustrated ideas for games and activities that parents and siblings can participate in along with the child with the disability. The title of the book is "Recipes for Fun." To order, send $8.50 to Let's Play to Grow, Suite 500, 1350 New York Ave., N.W., Washington, D.C. 20005.

I.U. Set to Begin Heart Transplantations

Indiana University Medical Center, Indianapolis, announces a new Cardiac Transplant Program and is now evaluating patients for the procedure. The Center will provide a comprehensive diagnostic and treatment program for all types of end-stage heart disease patients. The I.U. transplant program already includes kidney, cornea and bone marrow transplants.

New Name, Same Address

Drs. Karl L. Manders, John S. Marks, Malcolm S. Snell and David L. Steiman have re-named their neurosurgical practice "Neurosurgical Associates of Indiana." Formerly the practice was known as Manders, Marks, Snell & Steiman and was located at Medical Arts Building South, 5506 E. 16th St., Suite 24. The practice remains at the same office address.

Employee Leasing May Be a Way to Avoid Paperwork

Contract Force, Inc. of Indianapolis is in the employee leasing business. Thousands of small businesses, both professional and commercial, have transferred their employees to employee leasing companies, and then leased them back.

The advantage is that Contract Force and other employee leasing companies take care of all the paperwork—payroll checks, bookkeeping, federal and state withholding taxes, quarterly reports such as those for unemployment, insurance returns, W-2s and related items, and payroll deductions. Employees are said to be happier, and employers are not hassled.

Results are that, even after paying a fee for the service, the employer saves money. The scheme is said to be especially advantageous in a group medical practice where the main mission is to practice medicine and not be bothered with paperwork.

New ISMA Members

The following physicians were welcomed in May as new members of the Indiana State Medical Association:

Victor W. Binkley, M.D., Bluffton, general surgery.

Joseph C. Bremer Jr., M.D., Oak Park, Ill., emergency medicine.

Teodoro M. Collantes, M.D., Dyer, colon and rectal surgery.

John C. Collingwood, M.D., South Bend, radiology.

Zenaida M. Contreras, M.D., Terre Haute, pediatrics.

Philip A. Crooke, M.D., Bloomington, obstetrics and gynecology.

Steven P. Crowell, M.D., South Bend, internal medicine.

Jeffrey B. Dubnow, M.D., River woods, Ill., emergency medicine.

Michael W. Free, M.D., Columbus, family practice.

John W. Geurkink, M.D., Terre Haute, diagnostic radiology.

Smarjit S. Ghuman, M.D., Valpa raiso, cardiovascular surgery.

James S. Greene, M.D., Chicago, emergency medicine.

Brian W. Haag, M.D., Indianapolis, cardiovascular surgery.

Gary M. Halberstadt, M.D., In dianapolis, pediatrics.

Tin Hla, M.D., Michigan City, oncology.

Artemio D. Ignacio, M.D., Park Ridge, Ill., anesthesiology.

Jeffrey A. Jungers, M.D., Terre Haute, ophthalmology.

John Karedes, M.D., Indianapolis, family practice.

Geoffrey B. Korn, M.D., Evanston, Ill., emergency medicine.

Beryl W. Langley, M.D., Jefferson ville, child psychiatry.

Suzanne Y. Lee, M.D., Munster, ophthalmology.

Anthony B. Lewis, M.D., Gary, inter nal medicine.

Steven D. Maynard, M.D., Terre Haute, neurology.

John F. McNellis, M.D., Chicago, emergency medicine.

Lee McKinley, M.D., Bloomington, internal medicine.

P. S. Mohan-Thomas, M.D., Mer rillville, anesthesiology.

Jack A. Morgenstern, M.D., Fort Wayne, psychiatry.

Daniel A. Neumann, M.D., In dianapolis, general surgery.

John M. Nwannunu, M.D., Gary, family practice.

Usha S. Patel, M.D., Connersville, physical medicine and rehabilitation.

Peter C. Podore, M.D., Lawrence burg, general surgery.

David L. Powers, M.D., Frankfort, pathology.

Jerald A. Reinshagen, M.D., Rockport, family practice.

Richard C. Rink, M.D., Indianapolis, pediatrics.

Paul H. Schaak, M.D., Thorntown, general practice.

John H. Seward, M.D., Bedford, otorhinolaryngology.

Jitendra N. Sharma, M.D., Kokomo, neurology.

Malvinder Singh, M.D., Lansing, Ill., internal medicine.

Thana Smithivas, M.D., Fort Wayne, internal medicine.

Raymond N. Sweeney, M.D., Terre Haute, radiology.

Pakorn Tara, M.D., Valparaiso, car diovascular surgery.

Thomas P. Van Den Driessche, M.D., Fort Wayne, family practice.

Residents:

Joseph R. Baele, M.D., Indianapolis, orthopedic surgery.

Thomas J. Leipzig, M.D., In dianapolis, neurological surgery.

Luke P. Philippsen, M.D., In dianapolis, otorhinolaryngology.

Biogen Opens Facility for Supplying Gamma Interferon to Germany

Biogen has announced the opening of a facility for supplying gamma interferon to the West German market. Regulatory approval in Germany for use of Biogen's gamma interferon in the treatment of rheumatoid arthritis is expected later this year. The plant is the world's first facility for the commercial manufacture of recombinant gamma interferon.

Decatur Doctor Honored for His Life's Work

The May 12 issue of National Hospital Week, a tabloid newspaper published by the Adams County Memorial Hospital, featured a lengthy article on Dr. Richard K. Parrish of Decatur, a nationally known ophthal mologist. Dr. Parrish, who retired last year, was recently honored with a recognition plaque during a dinner meeting of the Adams County Medical Society, of which he is a past president.

By resolution of the Adams County Memorial Hospital Board of Trustees, Dec. 12, 1985 was declared "Richard K. Parrish, M.D., F.A.C.S. Day" in Adams County, according to the newspaper account.

Dr. Parrish has lectured and written numerous articles on eye care and is the author of *Introduction to Visual Optics*, a textbook now in its second prin ting which is being used at many medical schools. He is certified by the American Board of Ophthalmology and is a fellow of the American College of Surgeons and the American Academy of Ophthalmology.

In 1984, Dr. Parrish received the Honors Award from the American Academy of Ophthalmology for eye care education.

Indiana Now Has Fewer Medical Students

Indiana is below the national average in medical students as a percentage of the population, Dr. Walter J. Daly, dean of the Indiana University School of Medicine, told medical school alumni at their annual gathering in May.

"It is difficult to know what the cor rect number should be," Dr. Daly said. "Nationally, there are about seven first-year students per 100,000 population. In Indiana, we have 4.9."

Like most medical schools, however, I.U. has continued to decrease the size of enrollment, reducing the entering class by about 40 students to approximately 240.

NEWS NOTES

I.U. Unveils Plan for World-Class Cancer Center

Plans for a world-class cancer center at the Indiana University School of Medicine have been announced by Dr. Walter J. Daly, dean of the medical school.

Dr. Daly announced that an agreement involving I.U., the I.U. School of Medicine and the Walther Medical Research Institute has been made to found the Walther Oncology Center, "a tripartite effort to establish a world class cancer center on this campus." He also announced that the Walther Oncology Center of the Indiana University School of Medicine will be located in the new Medical Research and Library Building. Construction of the $34 million building is expected to begin later this year north of University Hospital.

Core program support for the Walther Oncology Center will be provided by the Walther Medical Research Institute, which Dr. Joseph E. Walther founded with the proceeds of the sale of Winona Memorial Hospital. Dr. Walther founded Winona in Indianapolis shortly after his World War II service as an Air Force flight surgeon. In 1984, the hospital was sold to the Republic Health Corporation of Dallas, Tex.

The Walther Medical Research Institute (WMRI) will provide $1 million per year for five years to provide core program support to the center.

Dr. Daly also announced that the university's commitment to the new center will include the endowment of a chair at the School of Medicine in the name of Mary Margaret Walther, to be occupied by the director of the center.

"As some of you know," Dr. Daly told the alumni, "Mary Margaret Walther provided much of the inspiration and support that helped Joe Walther climb the ladder of professional success. It was her loss to cancer that inspired Dr. Walther to dedicate his continued fight against cancer to her memory."

In making the announcement to the alumni, who had assembled from throughout the country, Dr. Daly expressed his appreciation—and the appreciation of the university and the medical school—to Dr. Walther, who was celebrating the 50th anniversary of his graduation from the school.

"I wish to thank Joe Walther for all he has done to make this exciting announcement possible," he said.

Dr. Daly will serve as interim director of the center until a director is named. A search for a director is underway. Pending completion of the new building, appropriate laboratory space at the medical center will be provided for the center's activities.

PICI Executive Promoted

Mr. Kurt Driscoll, executive vice-president of the Physicians Insurance Company of Indiana (PICI) since its inception, has been named president of The Professionals Insurance Company, Pickerington, Ohio. The Professionals is a wholly owned subsidiary of the Physicians Insurance Company of Ohio (PICO).

Succeeding Driscoll is Mr. M. David Duncan, who had been vice-president of marketing for PICO. Duncan's appointment became effective June 2.

PICI is endorsed by the Indiana State Medical Association.

Board of Health Gets AIDS Grant

The Indiana State Board of Health says it will be able to expand its community health education and needs assessment efforts in regard to acquired immune deficiency syndrome (AIDS) as a result of a recent award of $156,028 in federal funding.

The Department of Health and Human Services money "will be utilized to expand current AIDS educational programming and to assess community needs statewide," according to Woodrow A. Myers, Jr., M.D., state health commissioner.

"Since we don't have a cure for AIDS, our best efforts need to be directed at preventing future cases," Dr. Myers stated. The best way to do that is to educate as many persons as possible through our public programs, he added.

The State Board of Health's AIDS education program is designed to keep as steady a flow of valid information going to the general public as possible and to various groups and individuals on request. More than 300 AIDS educational programs have been presented and 80,000 pieces of literature distributed since September 1985.

The program operated on a budget of about $250,000 last year, Myers noted, and its ability to continue effective programming will depend directly upon its ability to continue to attract federal, state and local funds.

Additional applications for funding alternate test sites and surveillance programs have also been filed. Alternate test sites provide free antibody testing for those at high risk for acquiring AIDS. Indiana has had 84 diagnosed AIDS cases since 1982. Forty-five of those individuals have already died.

Use of funds in a state with few cases, such as Indiana, can be more effective than in states where incidence of the disease is much higher. Indiana has an opportunity to make a significant impact in halting the spread of AIDS within the state by providing citizens with factual information before cases reach such tremendous numbers as in New York, California and Florida.

Needed: Asthma Patients

Dr. Debra Myers is conducting an outpatient clinical trial at the Methodist Hospital in Indianapolis. The drug being tested is a new anti-inflammatory agent, Tilade. If you have patients interested who are on Theophylline and at least use an inhaled B_2 medication PRN, have them call the Study Coordinator, Mary Ann Payne, R.N. at (317) 929-3609 between 2 p.m. and 4 p.m.

$500,000,000 OF RESEARCH HELPED CLIFF SHAW PLAY BASEBALL AT AGE 85.



In November 1973, Cliff Shaw was stricken with cancer.

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There was a time when such a diagnosis was virtually hopeless.

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Today, one out of two people who get cancer gets well.

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THE INDIANA MEDICAL FOUNDATION, INC.

3935 North Meridian Street

Indianapolis 46208

A foundation for charitable, educational, and scientific purposes, organized by the ISMA as an endowment fund to support the educational mission of the Association and INDIANA MEDICINE.

Bequests, legacies, devises, transfers or gifts to the Foundation or for its use are deductible for federal estate and gift tax purposes, in accordance with the Internal Revenue Code.

The Foundation is managed by a board of directors that comprises the members of the ISMA Executive Committee. At present, proceeds from the Foundation investments are awarded to INDIANA MEDICINE to further the continuing medical education program.

Memorial contributions made to the Foundation in lieu of flowers will be acknowledged by the secretary in a letter to the family of the deceased.

"for religious, charitable, scientific,
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OBITUARIES

Aaron L. Arnold, M.D.

Dr. Arnold, 77, a retired Indianapolis general practitioner, died May 6 at his home.

He was a 1933 graduate of Indiana University School of Medicine and was an Army veteran of World War II. He retired from practice in 1982.

Dr. Arnold was a member of the American Academy of Family Physicians and the ISMA Fifty Year Club.

Carl J. Harmon, M.D.

Dr. Harmon, 81, a retired Richmond general practitioner, died April 13 at his home.

He was a 1933 graduate of Indiana University School of Medicine and was an Army veteran of World War II.

Dr. Harmon was a member of the ISMA Fifty Year Club.



Dr. Yoho

Harry M. Covell, M.D.

Dr. Covell, 84, a retired Auburn general practitioner, died April 26 at an Auburn nursing home.

He was a 1931 graduate of Indiana University School of Medicine and was an Army veteran of World War II. He retired from practice in 1984.

Dr. Covell was a past president of the DeKalb County Medical Society and was a member of the ISMA Fifty Year Club.

Frederick R. Dettloff, M.D.

Dr. Dettloff, 77, a Greencastle general practitioner, died May 6 at his home.

He received the M.D. degree in 1937 from the University of Berlin. He began his practice in Cloverdale in 1938, served as a psychiatrist with the Army during World War II, and began practicing in Greencastle after the war.

Dr. Dettloff was a former president of the Putnam County Medical Society.

Robert O. Yoho, H.S.D.

Dr. Yoho, 72, who retired in 1982 after 41 years with the Indiana State Board of Health, died March 20 in St. Petersburg, Fla.

Dr. Yoho was an honorary member of the Indiana State Medical Association. He was deputy state health commissioner at the time of his retirement. He was made an honorary ISMA member for "rendering meritorious service to the people of Indiana and to the medical profession."

Dr. Yoho, known as "Mr. Public Health of Indiana," was a key figure in the field trials of the Salk polio vaccine in nine Indiana counties. He also fought to eradicate tuberculosis. He was involved in the first state study of the problems of caring for the elderly and was a pioneer in promoting the use of auto seat belts.

He was a graduate of Indiana University and a fellow of the American Academy of Physical Education.

Edgar R. Cantwell, M.D.

Dr. Cantwell, 57, a Vincennes ophthalmologist, died April 23 at Good Samaritan Hospital.

He was a 1959 graduate of Indiana University School of Medicine and had served in the Army from 1948 to 1952.

Dr. Cantwell was a former Second District alternate trustee and was a former secretary of the Knox County Medical Society. He was credited with being the first Indiana physician to perform lens implants after cataract surgery.

Stuart J. Duncan, M.D.

Dr. Duncan, 52, an Indianapolis general practitioner, died April 22 at his home.

He was a 1959 graduate of Indiana University School of Medicine.

Dr. Duncan was on the staffs of St. Francis Hospital Center in Beech Grove and University Heights, Wishard Memorial and Community Hospitals.

Memorials: Indiana Medical Foundation

The Indiana Medical Foundation, Inc. was formed by the Indiana State Medical Association "for religious, charitable, scientific, literary or educational purposes." It provides financial assistance to support the educational mission of INDIANA MEDICINE.

Contributions made to the Foundation are deductible by donors in accordance with the Internal Revenue Code. Gifts are deductible for Federal estate and gift tax purposes.

The Foundation is pleased to acknowledge the receipt of gifts in remembrance of the following individuals:

Edwin W. Dyar, M.D.
Maurice E. Glock, M.D.
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Elsie A. Reid
Lester D. Bibler, M.D.
Lloyd A. Vogel, M.D.
Arvine G. Popplewell, M.D.
Mildred Ramsey

John G. Trimble, M.D.

Dr. Trimble, 69, a Kokomo ophthalmologist, died March 26 at his home.

He earned the M.D. degree in 1945 from the University of Edinburgh, Scotland.

Dr. Trimble had practiced in Kokomo since 1957. He was certified by the American Board of Ophthalmology and was a member of the American Academy of Ophthalmology.

Harold R. Wirey, M.D.

Dr. Wirey, 63, an Indianapolis general practitioner, died May 23 at his home.

He was a 1959 graduate of Indiana University School of Medicine and an Army-Air Forces veteran of World War II.

Dr. Wirey practiced 26 years in Southport and was on the staff at St. Francis Hospital, Beech Grove.

Isabel B. Turner, M.D.

Dr. Turner, 86, a retired Evansville anesthesiologist, died May 7 at St. Mary's Medical Center.

She was a 1924 graduate of the University of Louisville Medical School.

Dr. Turner joined the Evansville State Hospital staff in 1953 and remained there until she retired in 1970.

William R. Storer Sr., M.D.

Dr. Storer, 75, a retired Hobart physician, died May 25 at Methodist Hospital, Indianapolis.

He was a 1934 graduate of Indiana University School of Medicine and was an Army veteran of World War II.

Dr. Storer left his Hobart practice in 1953 to become public health director of St. Joseph County, Mich. He retired in 1966. He lived several years in Texas and Arizona before moving to Indianapolis in 1978.



Dr. Roeske

Harold L. Miller, M.D.

Dr. Miller, 57, a Richmond orthopedic surgeon, died May 1 in Miami, Fla.

He was a 1953 graduate of Indiana University School of Medicine and was a Navy veteran.

Dr. Miller was a former chief of surgery at Reid Memorial Hospital and a past president of the Wayne-Union County Medical Society. He was active in community affairs and, in 1972, was named citizen of the year by the Elks Club. He was board certified and was a fellow of the American Academy of Orthopaedic Surgeons.

Ralph L. High, M.D.

Dr. High, 78, a retired Muncie physician, died May 8 at his home.

He was a 1938 graduate of Rush Medical College, Chicago, and was an Army veteran of World War II. He retired from his Ob-Gyn practice in 1984.

Dr. High was active in community affairs and was a longtime faculty member of the Ball Memorial Hospital School of Practical Nursing. He was a diplomate of the American Board of Obstetrics and Gynecology and a charter member of the American College of Obstetrics and Gynecology.

Nancy A. Roeske, M.D.

Dr. Roeske, 58, a professor of psychiatry at Indiana University School of Medicine, died April 21 at her home.

She was a 1954 graduate of Cornell University Medical College.

Dr. Roeske was director of the Riley Child Guidance Clinic at the I.U. School of Medicine from 1964 to 1973 and had been coordinator of medical education in the psychiatry department since 1976. Her memberships included the American Psychiatric Association and the American Academy of Child Psychiatry. She was a former president of the Indiana Psychiatric Association.

Wendell W. Ayres, M.D.

Dr. Ayres, 83, a retired Marion surgeon, died April 27 at Marion General Hospital.

He was a 1926 graduate of Indiana University School of Medicine and was a Navy veteran of World War II.

Dr. Ayres had practiced in Marion since 1946. He was a fellow of the American College of Surgeons and was a member of the American Society of Abdominal Surgeons. He became a member of the ISMA Fifty Year Club in 1976.

Raymond E. Smalley, M.D.

Dr. Smalley, 73, formerly associated with the Student Health Center of Indiana University, died May 12 at his home in Meadowood.

He received the M.D degree from Northwestern University in 1939. He was a Navy veteran of World War II and the Korean War.

Dr. Smalley practiced at the V.A. Hospital in Fort Wayne before retiring in 1982.

COMMERCIAL ANNOUNCEMENTS

FAMILY PRACTICE AND PEDIATRICS—Michigan City, Indiana, 50 miles southeast of Chicago in northwest Indiana. 30-physician multi-specialty group seeking a family practitioner and pediatrician to add to their existing department of 13 family physicians and two pediatricians. Two fully accredited acute care hospitals with over 300 total beds. Modern, fully equipped clinic. Michigan City has a population of 60,000 with a medical drawing area of over 100,000. Competitive salary, full benefits. Located directly on the shores of Lake Michigan, the city displays endless recreational activities. Contact: Jean Malkasian, Fox Hill Associates, 250 Regency Court, Waukesha, WI 53186, or call collect (414) 785-6500.

INDIANA, North of Indianapolis: Immediate full time position and directorship in newly renovated emergency department at 135 bed facility. Hourly salary, flexible scheduling, malpractice insurance provided. For more information, call 800-253-1795 or in Michigan 800-632-3496; or send CV to Emergency Consultants, Inc., 2240 South Airport Road, Room 20, Traverse City, MI 49684.

PEDIATRIC PRACTICE for sale. Immediately available, northside Indianapolis. Well established. Completely equipped office. Write P.O. Box 40401, Indianapolis, Ind. 46240, or call (317) 251-4819 (after 6 p.m.).

EMERGENCY MEDICINE Position Available: Opportunity for experienced Emergency Physician to work weeknights 6 p.m. to 8 a.m., Kendallville, Ind. Contact Mr. John F. Ling Jr., Administrator (219) 347-1100, ext. 120.

ASSOCIATE DIRECTOR, Family Practice Education—An Indiana 1,100-bed private teaching hospital is seeking candidates for Associate Director of Family Practice Education. This position requires a board certified family practitioner with at least five years experience in family practice residency education. This position will be responsible for the clinical operation of the Family Practice Center as well as playing a major role in the administration of the undergraduate, graduate, and continuing medical education of a large, active Family Practice Program. Competitive salary and fringe benefits are offered with opportunity of limited private practice. Interested candidates should reply in confidence with CV and references to Methodist Hospital, Attn: Academic Affairs, P.O. Box 1367, Indianapolis, IN 46206.

GERIATRIC position available—Board certified FP or Internist wanted for full time employment at Indiana Veterans' Home, Lafayette, for exciting career in Geriatric practice with considerable academic contact. Long term security, many benefits. Contact: Ben Crouse, M.D., Medical Director, Indiana Veterans' Home, West Lafayette, Indiana 47906, at 317-463-1502.

INTERNAL MEDICINE—8-physician multi-specialty group seeking a third internist. Shelbyville, Indiana, 25 miles southeast of Indianapolis. 17,000 square foot, fully equipped clinic with complete in-house lab, built in 1978. 90-bed hospital built in 1981 with 6-bed ICU. Competitive salary, full benefits. Membership after one year. Contact Jean Malkasian, Fox Hill Associates, 250 Regency Court, Waukesha, WI 53186, or call collect (414) 785-6500.

OUTSTANDING EMERGENCY MEDICINE Position—Available immediately but actual starting time negotiable. Experienced Emergency Physician wanted to join private group practice. Fee for service—full and equal benefits and income immediately. Practice located in Anderson, Indiana. Contact Dr. Phillip Pinegar at either (317) 646-8220 or (317) 284-2605.

HOME NEAT HOME—Complete cleaning by Kim, a lady who knows how to wipe that dirty look off your space. Experienced, satisfaction guaranteed. Free estimates. References on request. Indianapolis area only. Please call Kim Hancock, (317) 844-8473.

OFFICE SPACE AVAILABLE: Greenwood Professional Park. Excellent accommodations in an established medical complex. Attractive. Well landscaped setting. Plenty of convenient parking. Complete laboratory and radiological services on premises. Centrally located in the fastest growing area of Indiana. Two miles from new University Heights Hospital. Ideal location for the individual practitioner or as an additional location for group practices. Ready for occupancy. No leasehold expenses required. For additional information, please call (317) 881-3565.

FAMILY PRACTICE for sale, Lawrenceburg, Indiana. Well established for the last eight years. 1500-plus square feet, fully equipped and furnished office with 300 MA X-ray and developer. Available immediately. Terms negotiable. Office space can be leased or purchased. Call Dr. V. Goel, (513) 385-8100 or (513) 681-8810.

ANESTHESIOLOGIST—Dipl ABA, FACA, Dipl NBME. 20 years experience including private practice, university, military, public health service. Proficient in all aspects of anesthesiology. Seeking solo/group/partnership arrangement; fee for service, salary, or percentage of billing. Available immediately. Reply to: J.R. Weinroth, M.D., 6302 N. 19th St., Phoenix, AZ 85016—(602) 264-2456.

EXCELLENT OPPORTUNITY—Staffing Immediate Medical Care Centers owned by a major Indianapolis hospital. Immediate full and part time available. Board certified or eligible in Family Practice or E.R. preferred, others considered. Occupational Medicine experience also a big plus. Very competitive compensation and benefit package. Send current Vitae to MEDCHECK ADMINISTRATION, 1500 N. Ritter Ave., Indianapolis, IN 46219—(317) 353-9850.

Commercial announcements are published as a service to members of the Indiana State Medical Association. Only ads considered to be of advantage to members will be accepted. Advertisements of a truly commercial nature (e.g., firms selling brand products, services, etc.) will be considered for display advertising.

All orders must be in writing and will automatically be set in regular classified type. *Box numbers are not available.*

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Address: INDIANA MEDICINE, 3935 N. Meridian St., Indianapolis, Ind. 46208.

FAMILY PRACTICE—Full time faculty position. Assistant Director of Family Practice center. Responsibilities include teaching in an outpatient setting, monitoring residents, and teaching procedural skills. Some direct patient care. Excellent compensation and benefits. Contact Cheryl Newman, West Suburban Hospital, Erie at Austin, Oak Park, IL 60302. (312) 383-6200.

PEDIATRICIAN—Growing 374-bed community hospital in near-west suburb of Chicago seeks board eligible or board certified pediatricians to associate with existing practices. Salary to start working into partnership. Contact Cheryl Newman, West Suburban Hospital, Erie at Austin, Oak Park, IL 60302. (312) 383-6200.

MEDICAL PRACTICE SALES—Listed below are a few available practices: **Allergy**—large Philadelphia practice; **FP + Int Med**—two Philadelphia practices; **Internal Medicine** Arizona, Bethesda, Maryland, large practice in western Pennsylvania; **Orthopedic Surgery** western Pennsylvania; **Pediatrics**—Colorado, eastern Pennsylvania and southern New Jersey; **Surgery**—New Jersey. We specialize in the valuation and selling of medical practices. If interested in buying or selling a medical practice, contact our brokerage division at: Health Care Personnel Consulting, 403 GSB Building, Bala Cynwyd, Pa. 19004—(215) 667-8630.

OFFICE SPACE AVAILABLE: Franklin, Indiana. Lease or sell. 1500 sq. ft. new medical office ready for occupancy. Waiting room, business office, consultation room, nurses station, four exam rooms. Cathedral ceilings. Skylights. One minute drive west of Johnson County Memorial Hospital in rural setting. Beautiful view. For additional information, please call (317) 736-7310.

OCCUPATIONAL HEALTH—Freestanding occupational health centers associated with prestigious community hospital in western suburbs of Chicago have immediate openings for both full and part-time physicians. Excellent compensation. Contact Cheryl Newman, West Suburban Hospital, Erie at Austin, Oak Park, IL 60302. (312) 383-6200.

POSITIONS AVAILABLE for qualified physicians to work St. Vincent Express Care Center, hours 11 a.m. to 11 p.m. Please contact Dr. Susan Stephens, (317) 844-9640.

EMERGENCY MEDICINE POSITION AVAILABLE Excellent opportunity for experienced emergency physician to join career emergency group practicing in northwestern Indiana, near Chicago. If you have over 4,000 hours experience, please contact Laurie Perkins at (312) 327-0777.

FAMILY PRACTICE—Several excellent opportunities immediately available to replace retiring physicians in western suburbs of Chicago. Hospital will provide generous income guarantee, and practice-building and management expertise. Contact Cheryl Newman, West Suburban Hospital, Erie at Austin, Oak Park, IL 60302. (312) 383-6200.

IMMEDIATE CARE CENTERS—Two immediate care centers in near west suburbs of Chicago have full and part-time positions immediately available. Opportunity to develop private practice if desired. Hospital will support practice. Contact Cheryl Newman, West Suburban Hospital, Erie at Austin, Oak Park, IL 60302. (312) 383-6200.

50% OFF PREVIOUSLY OWNED MEDICAL laboratory, office, x-ray, ultrasound equipment in excellent condition. We buy, sell, broker and repair. Appraisals by Certified Surgical Consultants. Medical Equipment Resale, Inc., 24026 Haggerty Road, Farmington Hills, Michigan 48018 (313) 477-6880

ISMA Constitutional Amendments

As required by Article X (Amendments) of the ISMA Constitution, INDIANA MEDICINE announces the following proposed constitutional amendments that were passed by the 1985 House of Delegates. The proposed changes were specified in Resolution 85-24, "Updating of the ISMA Constitution To Be in Compliance with Recent Changes to the ISMA Bylaws." These proposed changes will be voted on by the 1986 House of Delegates. The **boldface type** indicates the proposed new language, while that portion in parentheses indicates the existing language to be eliminated.

"Resolved, That the ISMA Constitution be amended as follows:

"Article I—Title and Definition: The name of this organization is the Indiana State Medical Association. It is the federacy of Indiana (county) **component** medical societies.

"Article IV—Members: The Indiana State Medical Association is composed of individual members of (county) **component** medical societies and others as shall be provided in the Bylaws.

"Article VII—Trustees: The Board of Trustees is composed of trustees and alternate trustees elected by the component district medical societies, and (the president) **the Resident Medical Society**, the president, (the) president-elect, treasurer, immediate past president, (the) assistant treasurer, (with power to vote only in the absence of the treasurer, and the) speaker, (and) vice speaker (without power to vote) and the executive director (without power to vote. The alternate trustees have power to vote only in the absence of the trustee.) **The members of the Board of Trustees shall have the power to vote as prescribed in the Bylaws.**

"The Board of Trustees shall have charge of the property and financial affairs of the Association and shall perform such duties as are prescribed by the law governing directors of corporations or as may be prescribed in the Bylaws."

Membership Roster

The 1986-87 edition of the Indiana State Medical Association Membership Roster is now available. The roster is mailed automatically to all ISMA members.

Additional copies of the roster will be sold for $15.00 each for a physician member and $30.00 each for a non-member, payable in advance. Checks should be payable to the Indiana State Medical Association.

For more information or to order copies, write to the ISMA Membership Department, Attn: Rosanna Iler, 3935 N. Meridian St., Indianapolis, Ind. 46208.

Are You Moving?

If so please send change of address to Membership Dept., ISMA, 3935 N. Meridian St., Indianapolis Ind. 46208, at least six weeks before you move.

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References: 1. Kales J, *et al Clin Pharmacol Ther 12* 691-697, Jul-Aug 1971 2. Kales A, *et al Clin Pharmacol Ther 18* 356-363, Sep 1975 3. Kales A, *et al Clin Pharmacol Ther 19* 576-583, May 1976 4. Kales A, *et al Clin Pharmacol Ther 32* 781-788, Dec 1982 5. Frost JD Jr, DeLucchi MR *J Am Geriatr Soc 27* 541-546, Dec 1979 6. Dement WC, *et al Behav Med*, pp 25-31, Oct 1978 7. Kales A, Kales JD *J Clin Psychopharmacol 3* 140-150, Apr 1983 8. Tennant FS, *et al* Symposium on the Treatment of Sleep Disorders, Teleconference, Oct 16, 1984 9. Greenblatt DJ, Allen MD, Shader RI *Clin Pharmacol Ther 21* 355-361 Mar 1977



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Indications: Effective in all types of insomnia characterized by difficulty in falling asleep, frequent nocturnal awakenings and/or early morning awakening, in patients with recurring insomnia or poor sleeping habits, in acute or chronic medical situations requiring restful sleep. Objective sleep laboratory data have shown effectiveness for at least 28 consecutive nights of administration. Since insomnia is often transient and intermittent, prolonged administration is generally not necessary or recommended. Repeated therapy should only be undertaken with appropriate patient evaluation.

Contraindications: Known hypersensitivity to flurazepam HCl, pregnancy. Benzodiazepines may cause fetal damage when administered during pregnancy. Several studies suggest an increased risk of congenital malformations associated with benzodiazepine use during the first trimester. Warn patients of the potential risks to the fetus should the possibility of becoming pregnant exist while receiving flurazepam. Instruct patients to discontinue drug prior to becoming pregnant. Consider the possibility of pregnancy prior to instituting therapy.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. An additive effect may occur if alcohol is consumed the day following use for nighttime sedation. This potential may exist for several days following discontinuation. Caution against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). Potential impairment of performance of such activities may occur the day following ingestion. Not recommended for use in persons under 15 years of age. Withdrawal symptoms rarely reported; abrupt discontinuation should be avoided with gradual tapering of dosage for those patients on medication for a prolonged period of time. Use caution in administering to addiction-prone individuals or those who might increase dosage.

Precautions: In elderly and debilitated patients, it is recommended that the dosage be limited to 15 mg to reduce risk of oversedation, dizziness, confusion and/or ataxia. Consider potential additive effects with other hypnotics or CNS depressants. Employ usual precautions in severely depressed patients, or in those with latent depression or suicidal tendencies, or in those with impaired renal or hepatic function.

Adverse Reactions: Dizziness, drowsiness, lightheadedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported: headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehension, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been rare occurrences of leukopenia, granulocytopenia, sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations, and elevated SGOT, SGPT, total and direct bilirubins, and alkaline phosphatase, and paradoxical reactions, *e.g.*, excitement, stimulation and hyperactivity.

Dosage: Individualize for maximum beneficial effect. *Adults*: 30 mg usual dosage, 15 mg may suffice in some patients. *Elderly or debilitated patients*: 15 mg recommended initially until response is determined.

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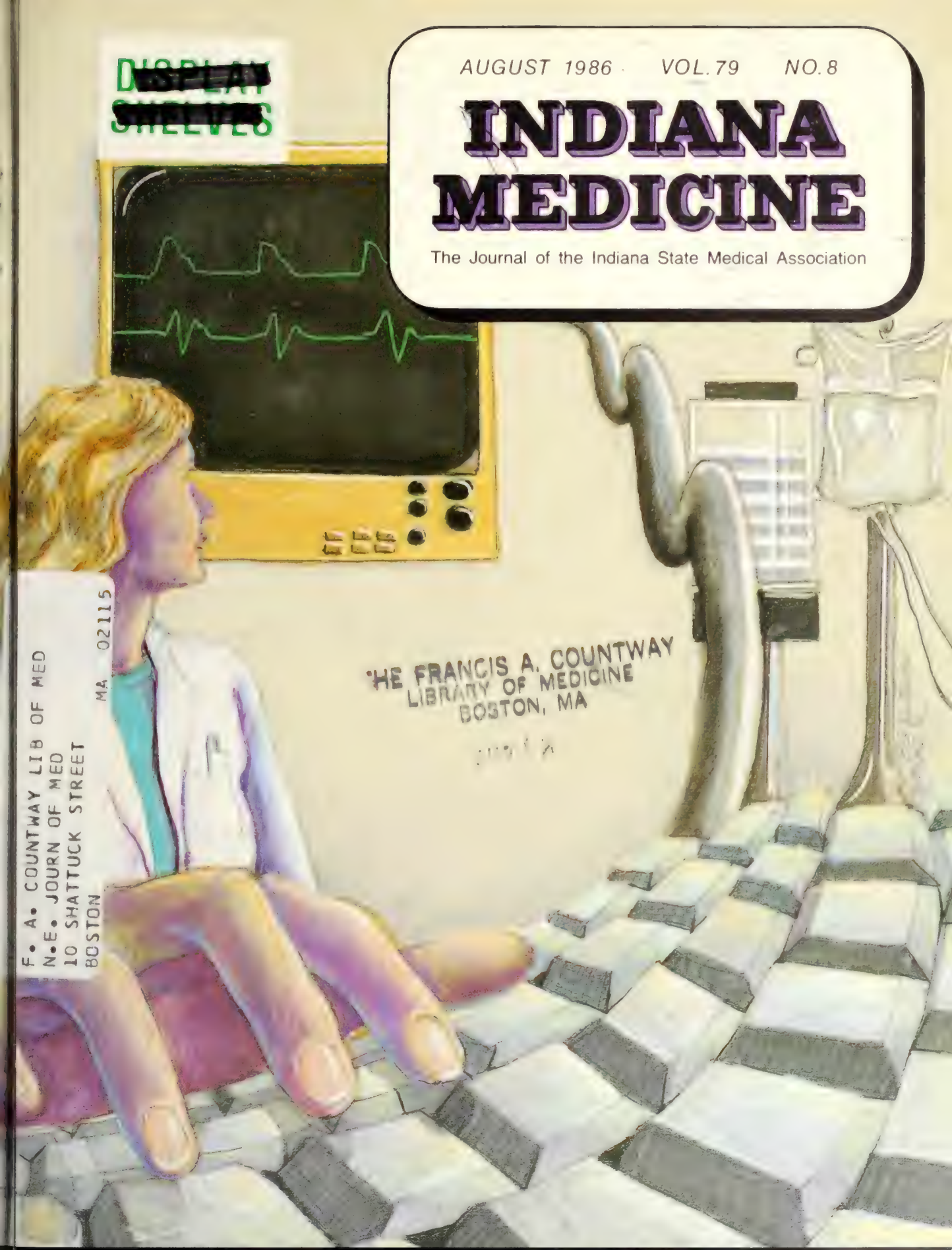
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The Journal of the Indiana State Medical Association



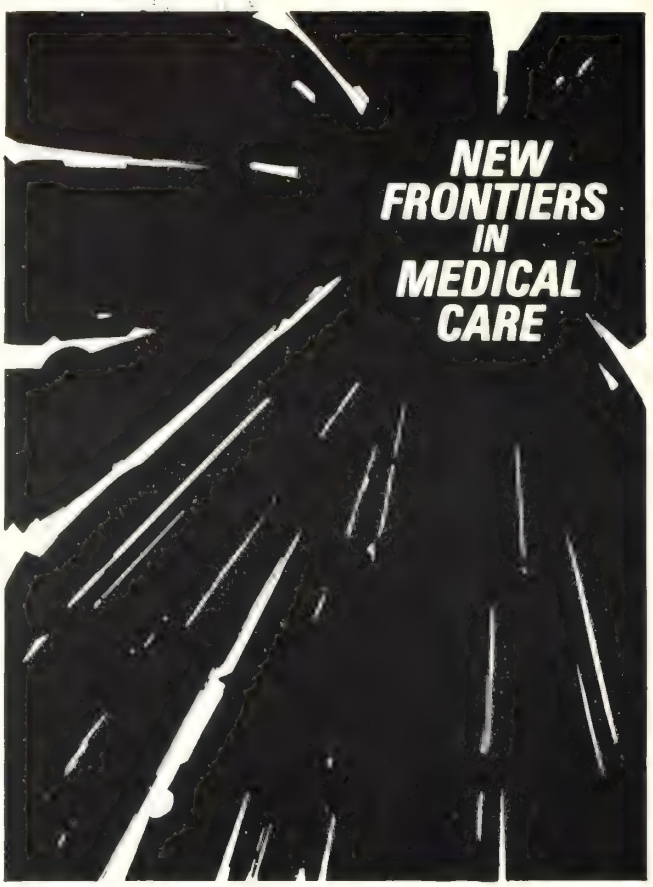
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Vol. 79, No. 8
AUGUST 1986

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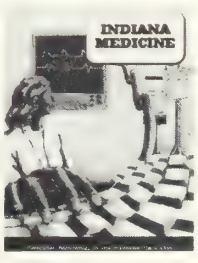
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ABOUT THE COVER

Physicians active within the ICU and within the decision-making groups considering expanded ICU functions must be aware of both the capabilities and the deficiencies of current information processing and monitoring systems, says Dr. Regis Lagler in his article, "Computer Technology in the ICU." Part I appears in this issue.—DRAWING BY BRENDA KESTER, MEDICAL MEDIA PRODUCTIONS, METHODIST HOSPITAL OF INDIANA

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MEDICAL MUSEUM NOTES

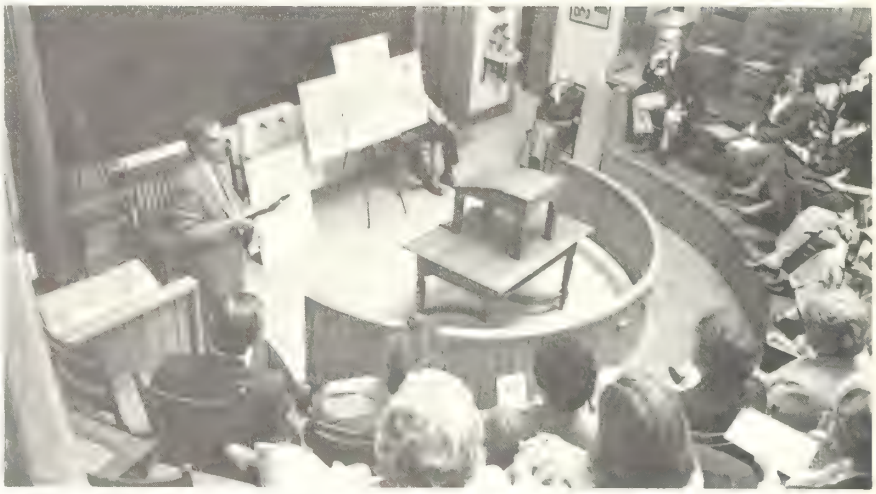
CHARLES A. BONSETT, M.D., Indianapolis

THE LONG TERM preservation of the Old Pathology Building, home of the Indiana Medical History Museum, was guaranteed by passage this year of House Bill 1120. The bill granted a 99-year lease on the building itself and on five acres of land.

An open house, honoring the Indiana legislators whose efforts helped ensure passage of HB 1120, was held in the Old Pathology Building Sunday, April 20, at which time the pictures on this page were taken.

The legislators honored were State Representatives George E. Schmid, Donald T. Nelson and Sheila Klinker; and State Senators Patricia L. Miller and Michael E. Gery.

HB 1120 was passed without a single dissenting vote!



Architect John R. Munson explains the building and its potential. Seated at the top is Dr. Frank Ramsey; to his left is Dr. Bernard Rosenak, and to his left is Senator Patricia L. Miller.



Peter T. Harstad, Ph.D., executive director of the Indiana Historical Society, and Rep. and Mrs. George E. Schmid.



Dr. William M. Sholty, president of the museum's Board of Directors, welcomes guests in the museum's amphitheater.



Among those in the audience were Dr. Walter Daly, dean of I.U.S.M. (aisle seat, top right row), and Ruth Stanley, superintendent of Central State Hospital (second seat from aisle, top left row).



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WHAT'S NEW?

Roche announces FDA approval for marketing Roferon®-A, its brand of alfa interferon, for treatment of hairy-cell leukemia. While studies are ongoing in a number of cancers and viral diseases with this and other interferons, the only indication is hairy-cell leukemia.

Honeywell has introduced an enhanced medical record system. The name is TRACTS Plus. It is a comprehensive system that facilitates medical record management by automating all department functions, including transcription, deficiency analysis, chart tracking, reporting and abstracting. The new system adds several new capabilities to the original TRACTS system introduced in 1984.

Pyramid Film & Video announces up to 50% trade-in allowances on new CPR films. New films are available to supplement CPR training, "CPR for Bystanders" and "CPR for Rescuers." The older films are all remade to new and higher standards. If new films are ordered, the old films may be retained until the new ones arrive.

Squibb's "Azactam" and possibly other Squibb intravenous drugs, will be marketed in the future as part of Abbott's "ADD-Vantage" I.V. drug admixture system. Squibb currently is awaiting government approval for "Azactam."



"If you want to be able to keep your next appointment, we'd better move it ahead."

News of what is new in the medical supply industry is composed of abstracts from news releases by book publishers and manufacturers of pharmaceuticals, clinical laboratory supplies, instruments and surgical appliances. Each item is published as news and does not neces sarily constitute an endorsement of a product or recommendation for its use by INDIANA MEDICINE or by the Indiana State Medical Association.

The Honeywell Healthnet Physician System is designed to improve medical office productivity, administrative control and patient relations. It is designed for offices of up to 15 physicians and can also be used by ambulatory care units and health maintenance organizations within hospitals. Major modules with the system are patient registration, billing, accounts receivable, practice analysis, claims processing and electronic claims submission.

Abbott Laboratories announces a new "Test PackhCG-Urine" for in-office pregnancy test. It produces an unequivocal positive sign or an unequivocal negative sign within a few minutes. The test comes with all the reagents and containers required including disposable pipettes.

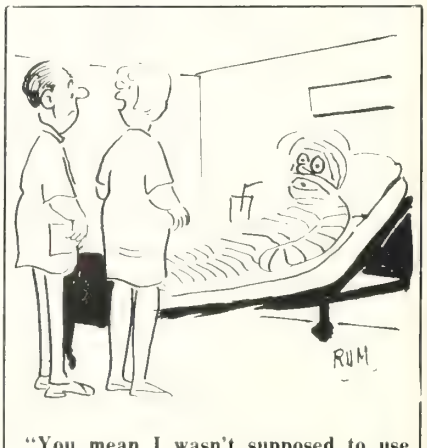
Midmark Corporation has a new power examination table, claimed to be the most advanced, most "user-friendly" power table in America. The 411 Concorde adjusts height, tilt, back and leg section angles simultaneously in about one-third the time required by sequentially positioning power tables.

Chattanooga Corporation has introduced Flexigrip™, a hand exerciser to facilitate early motion therapy for fingers and hands. Also a new line is introduced, consisting of compression units and garments made to fit on intermittent compression pumps. The name is PresSsion. The pumps have a higher performance in air flow and pressure rise time as compared with previous pumps. The motors are smooth and quiet and all pumps have built-in fail-safe features and auto-valve hose socket outlets.

The Mead Johnson Nutritional Group announces the availability of its new, rapid diagnostic test kit for group A *Streptococcus* bacteria. The kit is named "Insta Kit™ for Group A Strep ID." It provides an accurate in-office diagnostic test that can be performed within minutes.

Lederle announces "ACHROMYCIN" (Acromycin ophthalmic suspension 1%). The dosage form (single unit) is recommended for treatment of eyes of newborns to prevent venereal infections. ACHROMYCIN is effective against both the gonococcus and chlamydia. Silver nitrate is not effective against chlamydia. Tetracycline solution protects against the vast majority of ocular infections in the newborn. Thirty-nine states now recommend the tetracycline solution for newborns. Texas has disallowed the use of silver nitrate for this purpose.

Honeywell has a new business system for hospital radiology departments. It was developed with University of Texas M.D. Anderson Hospital and Tumor Institute to support department management, patient scheduling and management, transcription, film jacket tracking, complete office automation and reporting. The system can communicate with Honeywell and non-Honeywell computers in other departments, such as admissions or the business office.



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FUTURE FILE

Allergy-Immunology

"Update in Allergy and Clinical Immunology III—1986" is the title of a conference which will focus on acute allergic reactions of the skin, anaphylaxis and severe asthma, in addition to an update on AIDS, to be conducted October 2 and 3 at the University of Wisconsin Clinical Science Center in Madison. AMA Category 1 credit is for 13 hours. Football tickets are available for Wisconsin vs. Michigan.

Correspondent is Sarah Aslakson, 465B WARF Bldg., 610 Walnut St., Madison, Wisc. 53705—(608) 263-2856.

Critical Care

The Fifth Annual Chicago Critical Care Symposium will be conducted Sept. 25-28 at the Chicago Marriott Downtown Hotel. The fee for physicians is $360.

For more information, contact the University of Health Sciences, The Chicago Medical School, 333 Green Bay Road, North Chicago, Ill. 60064—(312) 578-3215.

Pediatric Otology

"Pediatric Otology—Perspectives in Otitis Media: Diagnosis and Management" will be the subject of a day-long seminar in Indianapolis on Thursday, Oct. 23.

The seminar, designed for primary care physicians, otolaryngologists, pediatricians and other interested health professionals, is being sponsored by the Ear Institute of Indiana and the I.U. School of Medicine. Guest speakers will be Drs. Heinz F. Eichenwald and Virgil Howie, Professors of Pediatrics at the University of Texas.

The seminar is approved for seven hours of AMA Category 1 credit. The fee for physicians is $100, residents $15.

For more information, contact Jan Drake, Ear Institute of Indiana, 8103 Clearvista Parkway, Indianapolis, 46256—(317) 842-4757, or toll free in Indiana, 800-522-0734.

Nuclear Cardiology

The 11th Annual Nuclear Cardiology Symposium will meet at The Red Carpet Hotel, South Howell Avenue, Milwaukee, Sept. 25 and 26. AMA Category 1 credit is for 18 hours.

The correspondent is Sarah Aslakson, 465B WARF Bldg., 610 Walnut St., Madison, Wisc. 53705—(608) 263-2856.

St. Vincent Hospital CME

St. Vincent Hospital and Health Care Center, Indianapolis, announces the following CME programs:

Sept. 4-5: Ob/Gyn Laser Course, a hands-on workshop for physicians.

Sept. 20-21: Echocardiography, Abdominal and Ob/Gyn Sonography Review.

Oct. 8: 11th Annual Arthur B. Richter Lectureship in Clinical Cardiology; Shahbudin H. Rahimtoola, M.D., University of Southern California, guest lecturer.

Oct. 10: Clinical Aspects of PTCA-II, an introductory course for physicians, nurses and technologists.

All meetings will be at St. Vincent Hospital. For more information, contact Marilyn Soltermann, CME Coordinator—(317) 871-2345.

Infantile Apnea

"Infantile Apnea and Home Monitoring" will be the subject of an NIH Consensus Development Conference in Bethesda, Md., Sept. 29-Oct. 1

Anyone wishing to attend or who wishes to receive a copy of the report, or a videotape containing a summary of the panel's recommendation, should write to Barbara McChesney, Prospect Associates, 1801 Rockville Pike, Suite 501, Rockville, Md., 20852.

The *Journal of the American Medical Association* publishes a list of CME courses for the United States twice yearly. The January listing features courses offered from March through August; the July listing features courses offered from September through February.

Vascular Seminars

"Noninvasive Vascular Diagnostic Techniques" will be the subject of a meeting in Washington, D.C. Oct. 30 through Nov. 1.

"Assessment of Arteries and Veins by Duplex Ultrasound" is the title of a medical meeting in New Orleans Oct. 17-19.

The fee is $395 for each seminar. Both are sponsored by Temple University and the Institute for Medical Studies.

Contact Lisa Krehbiel, Institute for Medical Studies, 30131 Town Center Dr., Suite 215, Laguna Niguel, Calif. 92677—(714) 495-4499.

Pesticides

"Pesticides and Groundwater: A Health Concern for the Midwest" is the title of a conference to be held Oct. 16-17 in St. Paul, Minn. The meeting is sponsored by the Health and Environment Network, a national information exchange on environmental problems.

For information, contact the Network at 2500 Shadywood Road, Box 90, Navarre, Minn. 55392—(612) 471-8407.

Tissue Expansion

"Tissue Expansion Today" is the subject of an advanced course to be conducted Sept. 23-25 at Hershey, Pa. It is sponsored by the Plastic Surgery Educational Foundation. The fee for guests is $525.

Write to the Foundation at 233 N. Michigan Ave., Suite 1900, Chicago 60601.

ACP Regional Meeting

A regional CME meeting will be conducted by the Indiana Chapter of the American College of Physicians Nov. 7-8 at the Sheraton Marten House, Indianapolis.

Non-members may attend and are asked to register beforehand by contacting Dr. Richard C. Powell, Emerson Hall, Room 302, 545 Barnhill Drive, Indianapolis 46223—(317) 274-8133.

Indiana University CME

Aug. 15-16: Pancreatic Carcinoma/ Acute Pancreatitis, Sheraton Marten House, Indianapolis.

Sept. 10: ENT Update for Primary Care Physicians, Reid Memorial Hospital, Richmond.

Sept. 17-18; Second Symposium on Endothelial Seeding, Hyatt Regency, Indianapolis.

Sept. 29-Oct. 1: Advanced Echocardiography, Hyatt Regency, Indianapolis.

Oct. 3: Office Orthopedics, Sheraton Marten House, Indianapolis.

Oct. 9-10: Care of the Seriously Ill Child, Holiday Inn Union Station, Indianapolis.

Oct. 18-19: Legal Role of the Expert: A Focus on Child Abuse, Adam's Mark Hotel, Indianapolis.

For more information, contact Melody Dian, CME, I.U. School of Medicine—(317) 274-8353.

Methodist Hospital CME

Oct. 2-3: Annual Harold C. Ochsner Lectureship, Roger Sanders, M.D., Johns Hopkins University, Methodist Hospital, Indianapolis.

Oct. 10-11: Advanced Cardiac Life Support, Methodist Hospital, Indianapolis.

For more information, contact Dixie Estridge, CME coordinator, Graduate Medical Center, Methodist Hospital of Indiana—(317) 929-3733.

Kansas CME Courses

The University of Kansas Medical Center has scheduled three CME courses, all offering AMA Category 1 and AAFP credit.

"Medicine and Religion: Ethics of Sexuality and Reproduction" will meet Oct. 21-22. "American Cancer Society: Pediatric Oncology Symposium" will meet Oct. 17. Both courses will be conducted at Battenfield Auditorium, 39th and Rainbow Blvd., Kansas City.

"Emergency Respiratory Care" will meet Oct. 24-25 at the Doubletree Hotel in Overland Park, Kans.

The correspondent is Carole Rosen, CME Office, 39th and Rainbow Blvd., Kansas City, Kans. 66103—(913) 588-4480.

Evansville Seminars

St. Mary's Medical Center, Evansville, announces the following fall seminars:

Sept. 18—Joseph E. Coleman Pediatric Seminar; theme-Pediatric Neurology.

Oct. 16—The Endocrine Seminar, Part VII; theme-Endocrine Function of Non-Endocrine Organs.

Nov. 6—Computers in Medicine Seminar.

For more information, contact W. T. Spain, M.D., St. Mary's Medical Center, 3700 Washington Ave., Evansville, Ind. 47750—(812) 479-4468.

Oculoplastic Surgery

The Third Annual Multispecialty Oculoplastic Surgery Symposium will be conducted Sept. 12-14 at the Lexington Marriott Resort Hotel, Lexington, Ky.

The program, sponsored by Good Samaritan Hospital of Lexington, is directed to oral surgeons, dermatologists, otolaryngologists, plastic surgeons and ophthalmologists. The faculty is composed of noted specialists from the entire United States. The fee is $350 for physicians and $100 for residents with a letter from their chairman. Twelve CME credit hours will be awarded.

For a program, hotel arrangements and other information, write to Dr. Constance M. Fulmer, Good Samaritan Hospital, Lexington, Ky. 40508.

AMA Communications

The AMA National Communications Conference will be held Oct. 24 and 25 at the Ambassador West Hotel in Chicago.

Subjects discussed will include professional liability, cost of health care, Medicare reimbursement, competition, physician image and patient education. There also will be optional seminars on Oct. 23 devoted to enhancing media skills.

Correspond with the AMA Division of Communications, 535 N. Dearborn, Chicago 60610.

Neurology Course

"Neurology for the Non Neurologist" is a CME course sponsored by Rush Medical College which will be conducted Dec. 10-12 at the Chicago Westin Hotel.

Contact: University Office of Continuing Education, Rush University, 600 S. Paulina, Chicago 60612—(312) 942-7095.

Cardiology Dept. Mgmt.

A conference on "Cardiology Department Management," sponsored by the Institute for Medical Studies, will meet in Dallas Nov. 14-15. The fee is $295.

The correspondent is Lisa Krehbiel, Institute for Medical Studies, 30131 Town Center Dr., Suite 215, Laguna Niguel, Calif. 92677—(714) 495-4499.

HMSS Annual Meeting

The ISMA Hospital Medical Staff Section will conduct its annual meeting Sunday, Sept. 7, at the Embassy Suites North, Indianapolis.

Model medical staff bylaws will be discussed in depth for approval by the HMSS and subsequent submission to the 1986 ISMA House of Delegates.

All interested ISMA members are invited to attend. Registration fee is $15, payable in advance. Registration at the door will be $20. The fee includes lunch. Registration begins at 8 a.m., with the meeting set to begin at 9 a.m.

For more information contact Beckett Shady-King at ISMA headquarters.

Critical Care Symposium

The Fifth Annual Chicago Critical Care Symposium will be conducted Sept. 25-28 at the Chicago Marriott Downtown Hotel.

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CANCER CORNER

WILLIAM M. DUGAN, JR., M.D.
Methodist Hospital Cancer Care Center, Indianapolis

AN EDITORIAL

A STATEWIDE CANCER REGISTRY . . . good science or a "black hole?" . . . . A couple of years ago, I testified in the State Legislature against the development of a statewide cancer data system. This surprised a number of people who know me to be an advocate of hospital registries and even national data collection on cancer care.

My point, at the time, was that it seemed the state registry was going to be underfunded, understaffed, poorly conceptualized and of little practical use to anyone. On the whole, I've found that most registries are considered "black holes" by physicians and administrators who pour in money and data which never see the light of day.

Yet, it's important not to mistake my intentions. I really *like* registries, if they work properly! By that, I mean a system which allows you to put data in and get answers out: answers to epidemiologic questions, clinical research questions, patterns of care questions . . . even administrative questions. There are now a number of states with computerized data systems that provide answers. My problem was that I did not see how anyone was going to do anything on $100,000 a year except create another "black hole."

Well, I was mostly wrong. The staff at the State Board of Health has made an impressive start developing policies and procedures, involving a cross section of individuals on advisory committees, and generally preparing the way for a meaningful statewide data base that should be easy to use to answer questions. No hospital will be able to look at another hospital's data, only its own data; either alone or in comparison with state and national cumulative samples. The planning process has given careful consideration to patient, physician and hospital confidentiality. On the whole, that state has not tried to reinvent the wheel. For example, they are allowing those places with existing, computerized systems to report electronically. Additionally, the basic data set exactly parallels the American College of Surgeons; data set, a wise decision that should help eliminate duplicate abstracting. It's obvious this registry will not work without an increased budget, but the projected biennial budget is very modest and frugally thought out.

So far, so good. But danger still lies ahead. A few individuals, who apparently know little about the concerns of the legislature over toxic waste dumps and other long-term environmental time bombs and little about the science of epidemiology and medicine, have attempted to eliminate the requirement for patient follow-up reporting. Well, let's be realistic. It's a waste of time to put in case information if you can't do survivals. The legislation calls for epidemiologic studies. "The State Board shall establish a cancer registry for the purpose of recording all cases of malignant disease that occur in Indiana residents and compiling necessary and appropriate information concerning those cases, as determined by the Board, in order to conduct epidemiologic surveys of cancer and to apply appropriate preventive and control measures." (IC 16-4-9, Sec. 3.) There is not an epidemiologist or clinician who is going to care about these data if they lack follow-up information. No follow-up means no survival data. Back to the "black hole." The American College of Surgeons would never certify a cancer registry that omitted follow-up information!

Now, it seems to me, there are two alternatives. First, we could scrap the whole idea of a statewide registry. I'd buy this if the nonscientists are going to emasculate it. I want answers, good science and good comparisons, not just more work. When you get down to it, most of the hospital follow-up letters come to physicians' offices as a primary source. I do not mind them because they're a good reminder that we need to schedule an annual follow-up visit if we have not already done so. And, I don't mind sending the data back, if I get answers in return.

A second alternative is for us to insist on follow-up. Indeed, since the law mandates epidemiologic studies, the law is requiring follow-up. In this case, the law is also mandating good science. Now, some hospitals will no doubt cry out about the follow-up "burden' and costs, but it's beyond me how any hospital can treat cancer patients and not provide its physicians with functional, useful information on patterns of care and survival. This follow-up requirement can be "phased in" to allow hospitals with limited cancer resources a period of time to come up to speed.

The state law and the rules and regulations do not provide any penalties for lack of participation, but good science is important to our patients and to us. It seems to me it's our job to support the whole shooting match to lobby our hospital administrators and to sit down and explain to our medical records people the importance of not doing a half-baked job. Anything else is not good science.

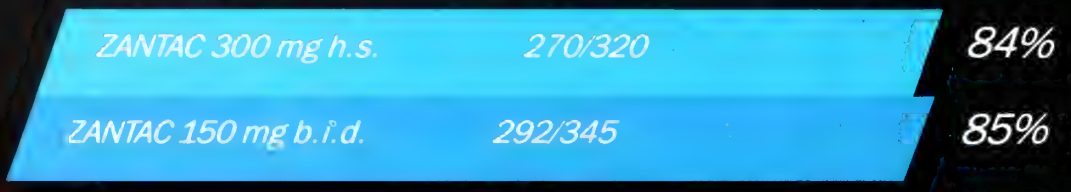
MORE ON A STATEWIDE CANCER REGISTRY . . . As a fellow member of the Statewide Cancer Registry Advisory Board, I heartily agree with Doctor Dugan's remarks on the analysis to make the statewide registry useful. Feedback to the clinicians and the hospitals involved is vital for the registry to be useful. The involvement of a top-flight epidemiologist in the analysis of information is crucial, as will the ability to do patterns of care studies. The statewide registry has tremendous potential, if we focus on the realization that it must be done with scientific accuracy, with complete information and with sound analysis. Anything less will not meet the Legislature's objectives of protecting the public health.—**Mason Goodman, M.D., Medical Director, Walther Medical Research Institute**


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See next page for references and Brief Summary of Product Information

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References: 1. Data available on request, Glaxo Inc. **2.** Ireland A, Colin-Jones DG, Gear P, et al: Ranitidine 150 mg twice daily vs 300 mg nightly in treatment of duodenal ulcers. *Lancet* 1984;2:274-275. **3.** Colin-Jones DG, Ireland A, Gear P, et al: Reducing overnight secretion of acid to heal duodenal ulcers. *Am J Med* 1984; 77 (suppl 5B):116-122

ZANTAC® 150 Tablets
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ZANTAC® 300 Tablets
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BRIEF SUMMARY OF PRODUCT INFORMATION

INDICATIONS AND USAGE: ZANTAC® is indicated in
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2. Maintenance therapy for duodenal ulcer patients at reduced dosage after healing of acute ulcers. No placebo-controlled comparative studies have been carried out for periods of longer than one year.
3. The treatment of pathological hypersecretory conditions (eg, Zollinger-Ellison syndrome and systemic mastocytosis).
4. Short-term treatment of active, benign gastric ulcer. Most patients heal within six weeks and the usefulness of further treatment has not been demonstrated. Studies available to date have not assessed the safety of ranitidine in uncomplicated, benign gastric ulcer for periods of more than six weeks.
5. Treatment of gastroesophageal reflux disease. Symptomatic relief commonly occurs within one or two weeks after starting therapy. Therapy for longer than six weeks has not been studied.

In active duodenal ulcer; active, benign gastric ulcer; hypersecretory states; and GERD, concomitant antacids should be given as needed for relief of pain.

CONTRAINDICATIONS: ZANTAC® is contraindicated for patients known to have hypersensitivity to the drug.

PRECAUTIONS: General: 1. Symptomatic response to ZANTAC® therapy does not preclude the presence of gastric malignancy.
2. Since ZANTAC is excreted primarily by the kidney, dosage should be adjusted in patients with impaired renal function (see **DOSAGE AND ADMINISTRATION**). Caution should be observed in patients with hepatic dysfunction since ZANTAC is metabolized in the liver.

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Drug Interactions: Although ZANTAC has been reported to bind weakly to cytochrome P-450 in vitro, recommended doses of the drug do not inhibit the action of the cytochrome P-450-linked oxygenase enzymes in the liver. However, there have been isolated reports of drug interactions which suggest that ZANTAC may affect the bioavailability of certain drugs by some mechanism as yet unidentified (eg, a pH-dependent effect on absorption or a change in volume of distribution).

Carcinogenesis, Mutagenesis, Impairment of Fertility: There was no indication of tumorigenic or carcinogenic effects in lifespan studies in mice and rats at doses up to 2,000 mg/kg/day.

Ranitidine was not mutagenic in standard bacterial tests (*Salmonella, E coli*) for mutagenicity at concentrations up to the maximum recommended for these assays.

In a dominant lethal assay, a single oral dose of 1,000 mg/kg to male rats was without effect on the outcome of two matings per week for the next nine weeks.

Pregnancy: *Teratogenic Effects: Pregnancy Category B:* Reproduction studies have been performed in rats and rabbits at doses up to 160 times the human dose and have revealed no evidence of impaired fertility or harm to the fetus due to ZANTAC. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers: ZANTAC is secreted in human milk. Caution should be exercised when ZANTAC is administered to a nursing mother.

Pediatric Use: Safety and effectiveness in children have not been established.

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ADVERSE REACTIONS: The following have been reported as ever clinical trials or in the routine management of patients treated oral ZANTAC®. The relationship to ZANTAC therapy has unclear in many cases. Headache, sometimes severe, seems related to ZANTAC administration.

Central Nervous System: Rarely, malaise, dizziness, somnole insomnia, and vertigo. Rare cases of reversible mental confu agitation, depression, and hallucinations have been reported, dominantly in severely ill elderly patients.

Cardiovascular: Rare reports of tachycardia, bradycardia, and mature ventricular beats.

Gastrointestinal: Constipation, diarrhea, nausea/vomiting, abdominal discomfort/pain.

Hepatic: In normal volunteers, SGPT values were increased least twice the pretreatment levels in 6 of 12 subjects rece 100 mg qid IV for seven days, and in 4 of 24 subjects rece 50 mg qid IV for five days. With oral administration there have occasional reports of reversible hepatitis, hepatocellular or he canalicular or mixed, with or without jaundice.

Musculoskeletal: Rare reports of arthralgias.

Hematologic: Rare reports of reversible leukopenia, granulo penia, thrombocytopenia, and pancytopenia.

Endocrine: Controlled studies in animals and man have show stimulation of any pituitary hormone by ZANTAC and no antian genic activity, and cimetidine-induced gynecomastia and i tence in hypersecretory patients have resolved when ZANTA been substituted. However, occasional cases of gynecoma impotence, and loss of libido have been reported in male pati receiving ZANTAC, but the incidence did not differ from that i general population.

Integumental: Rash, including rare cases suggestive of mild thema multiforme, and, rarely, alopecia.

Other: Rare cases of hypersensitivity reactions (eg, bronchosp fever, rash, eosinophilia) and small increases in serum creatin

OVERDOSAGE: There is no experience to date with deliberate dosage. The usual measures to remove unabsorbed material the gastrointestinal tract, clinical monitoring, and supportive apy should be employed.

Studies in dogs receiving doses of ZANTAC® in exce 225 mg/kg/day have shown muscular tremors, vomiting, and respiration. Single oral doses of 1,000 mg/kg in mice and rats not lethal. Intravenous LD_{50} values in rat and mouse were 83 77 mg/kg, respectively.

DOSAGE AND ADMINISTRATION: Dosage Adjustment for Patients Impaired Renal Function: On the basis of experience with a of subjects with severely impaired renal function treated ZANTAC®, the recommended dosage in patients with a creat clearance less than 50 ml/min is 150 mg every 24 hours. S the patient's condition require, the frequency of dosing m increased to every 12 hours or even further with caution. He alysis reduces the level of circulating ranitidine. Ideally, the d schedule should be adjusted so that the timing of a scheduled coincides with the end of hemodialysis.

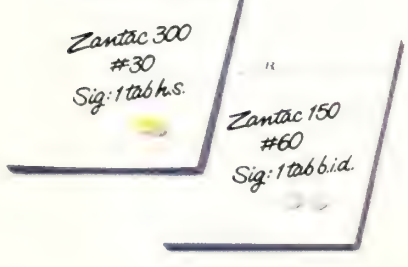
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Now...two effective regimens to treat active duodenal ulcers

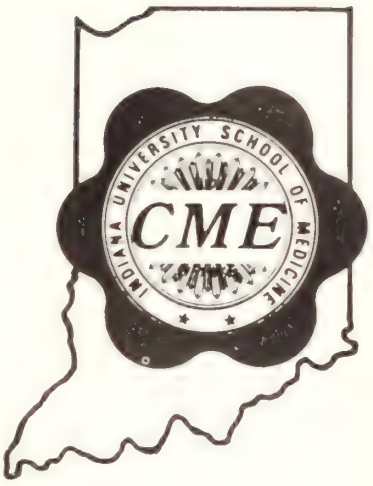


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Radiation Therapy and Non-Small Cell Lung Cancer: Current Perspectives

JOSEPH F. MONTEBELLO, M.D.
Indianapolis

THE CLINICAL manifestations of lung cancer were first described as early as 1420 when Theophrastus Bombastus Paracelsus of Hohenheim reported a disease process with various pulmonary manifestations in the Schneeberg miners of Saxony. In 1761 Morgagni discussed "ulcus cancrosum" in *De Sedibus et Causis Morborum*.[1] Lung cancer was considered a rare disease until the twentieth century. In 1912, I. Adler reported 374 cases of lung cancer in his review of the world literature.[2]

Lung cancer, the number one cause of cancer death in American men, accounts for a quarter of all cancer deaths today. The incidence of lung cancer is rising faster among women than men and probably will be the number one cancer killer of American women sometime in this decade.

Smoking has been established as a major etiologic factor. Other risk factors identified include exposure to asbestos, chromites, nickel, arsenic, uranium and other radioactive ore, chloroemeleylmethyl ethers, and vinyl chloride. Pulmonary scarring also has been associated with adenocarcinoma of the lung.

At the time of initial diagnosis, lung cancers often are unresectable and incurable. Symptoms usually appear late in the natural course of the disease. The majority of patients will present with advanced local disease or distant metastasis. Though surgery offers the greatest hope for a cure, less than 50% of patients will undergo thoracotomy and only a third will have a definite resection. About one-third of these patients who do have their disease resected survive for five years.[3] Survival following surgery is related to stage and to histology, as *Table 1*

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TABLE 1
Five-Year Cumulative Survival of Patients
Undergoing Definitive Resection*

Stage	Squamous Cell	Adenocarcinoma/Large Cell
I	54%	51%
II	35%	18%
III	19%	10%

*Adapted from Mountain CF: Asssessment of the role of surgery for control of lung cancer. *Ann Thorac Surg*, 24:365-373, 1977.

demonstrates. Non-operable patients given no treatment have a dismal prognosis.

The Veterans Administration Lung Study Group (VALSG) reported a two-year survival of 3.8% for inoperable patients receiving no specific therapy with disease limited to the hemithorax, with or without supraclavicular lymph nodes, and a 0.9% two-year survival for those with more extensive disease. Patients with a higher performance status enjoyed a longer survival rate.[4]

Definitive Irradiation

Although studies by various early investigators[5] documented generally dismal five-year survival rates for irradiated lung cancer patients, these reports generally represented cases unsuited for resection.

In 1956 J. Smart and G. Hilton documented their experience in irradiating operable lung cancer. This study consisted of 33 patients who had received 5500 r ortho-voltage irradiation over a seven- to eight-week period. These investigators reported a 33% five-year survival rate.[6] Smart updated his findings in 1966 with further follow-up studies and reported on 40 patients. Nine of these survived more than five years, for a 22.5% five-year survival rate.[5]

In 1963 R. Morrison reported on 58 operable patients who were randomly selected for treatment by surgery (30 patients) or by 8 million volt x-ray to a mean dose of 4500 cGy (28 patients). For all histologies, survival at four years was 7% for irradiated patients and 23% for the resected patients. These results were almost significant at the 5% level. When only squamous cell carcinoma was considered, survival was 30% for surgery at four years and only 6% for radiation. This was significant at the 5% level. Morrison concluded that for operable cases of squamous cell carcinoma, surgery was the treatment of choice. With anaplastic and oat cell cancer no significant difference in survival was seen, but the numbers were small. According to these studies, radiation therapy could apparently cure some patients with early stage lung cancer. Surgery, however, remained the treatment of choice.[7]

Typically, Stage I and Stage II lung cancers comprise a very small proportion of the patients seen by the radiotherapist. However, a subset of operable patients will refuse surgery. Other patients will be technically operable but inoperable for medical reasons. In these cases, irradiation should not be delayed until symptoms appear.

It has been debated whether radiation therapy offers any survival benefit to the inoperable Stage III lung cancer patient. Clearly, in patients with distant metastasis, radiation acts strictly as a palliative therapy. However, a subset of patients with limited but technically inoperable lung cancer may benefit from radical irradiation. Generally, five-year survival of these patients reaches only the range of 5-10%. Since survival is so low, careful selection of patients and attention to the dose and technique of delivering irradiation are necessary to minimize morbidity.

B. Roswitt *et al.* in 1958 described a randomized study concerning radiation of inoperable but localized lung cancer. Patients were randomized between irradiation and placebo therapy. Doses of 4000 to 5000 cGy were sought. About one-third of the patients received less than 4000 cGy with 14% having doses above 5000 cGy. Most patients (90%) were treated using 200 to 250 KV x-rays and the remainder underwent cobalt 60 or 1 million volt x-rays. Survival after one year was 18.2% in the treated group and 13.9% among controls.[8] This difference was statistically significant; but, the authors conceded that the difference is extremely small. The doses and techniques used by Roswitt *et al.* were less than optimal when compared to modern standards.

Important factors to consider in selecting patients for definitive irradiation include the amount of disease present and the performance status of the individual. One would not expect a limited lesion involving a non-resectable vital organ to carry the same prognosis following irradiation as a case of massive mediastinal adenopathy.

Some studies have shown a relationship between the amount of local disease and survival. S. Aristizabel in 1976 reviewed 203 patients who were separated into two groups according to the extent of local regional disease. Group A consisted of patients with well differentiated tumors confined to the lung and mediastinum. Group B included patients with anaplastic tumors and/or supraclavicular metastasis, bone erosion, or superior vena cava syndrome. Treatment consisted of a split course of 5500 to 6000 cGy in 20 to 24 fractions over a period of seven to eight weeks with a rest period of two to four

weeks between courses. Of those patients who completed therapy, 26% of Group A survived two years compared to only 12% of Group B. At five years, survival was 16% for Group A with no individual alive in Group B.[9]

In 1980, P. Coy *et al.* studied 141 patients treated with a curative intent with doses between 5000-5750 cGy. These individuals were excluded from surgery because of medical or technical reasons. Also, some patients refused surgery or had mediastinal involvement or small cell histology. Overall, the three- and five-year survival was 18% and 19%, respectively. Survival at three years correlated with tumor size in that patients with tumor less than three centimeters experienced a 28% three-year survival rate as compared to a 14% survival rate for those with a lesion greater than five centimeters in diameter.[10]

In advanced lung cancer, performance status (P.S.) plays a key role. J.D. Cox summarized the experience of the Medical College of Wisconsin regarding the survival of patients with inoperable lung cancer treated with irradiation. Those with a P.S. of 80-100 attained a five-year survival rate of 22%, as compared to the survival rate of the overall group of 11%.[11] Likewise, the Radiation Therapy Oncology Group (RTOG), a National Cancer Institute study group, discovered that the median survival was 32.0 weeks when the rating fell below 80 on the Karnofsky scale but was extended to 44.7 weeks with a P.S. of 80 to 100.[12]

Radiation dose and technique are related to local control. Cure is not compatible with persistent local disease; however, control of local disease does not ensure cure. A number of studies have attempted to show some relationship between the amount of dose delivered and survival or a relationship between local control and survival.

In 1968, W. Caldwell studied 284 patients irradiated with doses of 800 to 6500 cGy. Patients receiving less than 4500 cGy had a 12% two-year survival rate. Those receiving 4500-5500 cGy had a 29% two-year survival rate and those receiving more than 5500 cGy had a 59% two-year survival rate.[13]

In 1981, N. Choi reported on a retrospective study involving 162 patients with localized but inoperable non-small cell cancer, with most Karnofsky levels equal to or greater than 70. Only seven patients scored a performance status of 60. Doses ranged from 4000 to 6400 cGy. Patients treated with a dose of 5000 cGy or greater realized a five-year survival rate of 7.5%. However, none of those receiving doses less than 5000 cGy were alive after five years.

Choi also noted a 76% local control rate with doses of 5600 to 6400 cGy versus 29% of patients managed with doses of 4000 to 4900 cGy after 18 months. Significantly, in this study the lower dose group received localized ir radiation only to the primary tumor. The use of higher doses evolved with the utilization of an "en bloc" approach in which the primary tumor, the mediastinum, and the supraclavicular areas are also included in the treatment portal.[14]

In 1981 D. Sherman *et al.* reported on 348 patients treated with radical radiation therapy. His study dealt with 66 patients who survived at least 18 months. The five-year survival rate for this group of 348 patients was 5.6%. At the time of his report, three patients had no evidence of disease from 18 months to 96 months with a median follow-up of 38 months. Three of the eight (37.5%) patients who had received less than 5000 cGy were surviving, while 15 of 27 (55.5%) individuals who had received 5000-5500 cGy were without disease. No evidence of disease was noted in 13 of 31 (42%) patients who had received 5500 to 6020 cGy. Patients treated with 5000 cGy or less suffered a 50% local failure rate. Those receiving more than 5000 cGy but less than 5900 cGy had a 21% local failure rate while individuals who received 5900 cGy or more had only a 5% failure rate.[15]

TABLE 2
Results of Definitive Radiotherapy of Localized But Inoperable Lung Cancer

Author	Year Reported	Tumor Dose	No. of Patients	5-year Survival
Deeley, T.[19]	1967	3600-4500 cGy/20 treatments	513	6.0%
Guttman, R.[20]	1971	5000 cGy/5 weeks	103	8.7%
Cox, J.[11]	1980	4600-6000 cGy/4.5-6 weeks	92	11.0%
Coy, P.[10]	1980	5000-5750 cGy/5-5.5 weeks	141	10.0%
Eichhorn, H.-J.[21]	1980	5000 cGy/5 weeks	1046	2.5%
Hollsti, L.R.[22]	1980	5000-5500 cGy/5-8 weeks	363	4.0%
Choi, N.[15]	1981	5000-6400 cGy/5-6 weeks	108	7.5%
Sherman, D.[16]	1981	4000-6020 cGy/5-6 weeks	348	5.6%
Katz, H.[17]	1983	5500-6500 cGy/6-7 weeks	171	6.0%

In 1981, K. Shah *et al.* described 205 patients with inoperable non-small cell carcinoma treated in different fashions. Fifty-six patients received 5000 cGy in 25 fractions over five weeks (Group A); 79 patients received 2000 cGy in five fractions over five days, rested two weeks and repeated therapy of 2000 cGy in five fractions (Group B); and 70 patients received 3000 cGy in two weeks, rested three weeks, and repeated treatment of 3000 cGy (Group C). Biologically, Group C received the highest dose and Group A the lowest. Groups A and B underwent biologically similar doses. The two-year survival rate was 33% for A, 15% for B, and 25% for C. The difference between Group A and Group C was not statistically significant. Local failure occurred in 8/56 of Group A, in 1/79 of Group B, and in 3/70 of Group C.[16]

The RTOG reported in 1982 on a total of 378 patients randomized into one of four treatment arms: 4000 cGy split course (2000 cGy in five fractions during a week, two weeks rest, and an additional 2000 cGy in five fractions during a week) or 4000, 5000, or 6000 cGy in continuous courses. This study revealed that local control rates improved with higher doses. The overall complete and partial regression rate was 46% in patients receiving 4000 cGy in a split course, 51% with those receiving 4000 cGy continuous, 66% for those receiving 5000 cGy, and 61% for those receiving 6000 cGy. However, the two-year survival rate was 10% for a 4000 cGy split course, 11% for 4000 cGy continuous course, and 19% for those patients treated with 5000-6000 cGy. These differences are not statistically significant.[17]

It appears that the optimal dose for curative irradiation in lung cancer is in the range of 5000 to 6000 cGy. A higher local control rate generally accompanies an increasing dose, and perhaps, a slight improvement in overall survival in some series. Several studies have failed to show an improvement in survival with doses beyond 5000 cGy. Doses above 6000 cGy have been attempted with no survival benefit noted as compared to more conventional doses.[18]

Conclusion

Carcinoma of the lung carries a dismal prognosis regardless of the treatment used. Curative resection offers the best hope for a disease-free survival. Radiation is a viable alternative for patients who are technically operable, but refuse surgery or are not able to undergo resection due to medical reasons.

A spectrum of patients presents with technically inoperable lung cancer with disease limited to the chest. In those patients with high Karnofsky scores and lesions of modest size, irradiation is more likely to produce a disease-free, long-term survival. Progressively larger lesions which require larger fields and higher doses for control will be increasingly more difficult to control. The radiation oncologist approaches a point where the therapeutic ratio is less than one and, thus, more harm than benefit may be expected to occur. A careful selection of patients who are likely to benefit from therapy, as well as good judgment in the application of radiation, is essential.

Attention to technical factors to ensure adequate tumor coverage without excessive normal tissue damage is important. Simulation, custom blocking, computer dosimetry, and tissue compensation would be expected to improve local tumor control and to decrease pulmonary complications.

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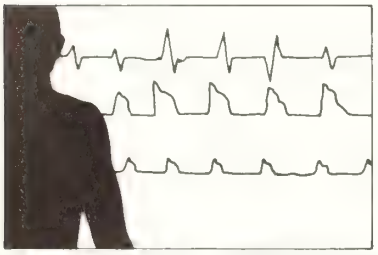
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Computer Technology in the ICU

Part 1: The Possibilities



ADULT CRITICAL CARE MEDICINE

In Considering Expanded ICU Functions, Attention Must Be Given to Both the Capabilities and the Deficiencies of Current Information Processing and Monitoring Systems . . .

REGIS LAGLER, M.D.
Indianapolis

THE CONCEPT OF using computer technology in the setting of the Intensive Care Unit has been an irresistible idea. In this environment the physician and nurse encounter a large amount of information gathered directly from the patient or remotely from the laboratory, radiology and other departments. Through organizing, displaying or using these data in other ways, the computer *should* be able to assist the physician and nurse to improve direct patient care. However, it is very possible to implement a computer system and realize no real benefit; in fact, such systems can readily become a liability.

The focus of this paper is the appropriate use of technology in the ICU, with a discussion of what is available and useful. Part 1 will discuss the potential applications of advanced computer-based technology in this complex setting. Part 2 will explore those system limitations which may hamper implementation, or worse, allow to present erroneous information to the physician. Also to be presented in Part 2 is an overview of technology developing at Methodist Hospital in Indianapolis.

Physicians active within the ICU and within the decision-making groups considering expanded ICU functions must be aware of both the capabilities and the deficiencies of current information processing and monitoring systems. It is important to realize that computer applications should blend into and fortify the present operation of the hospital or other departments which support the ICU. There should be a real need for this advanced and often costly technological approach. Thus, the utilization of computer technology at any given level should be subject to careful scrutiny.

Generally, a computer-based monitoring system would be expected to provide medical and nursing staff with current reports of a wide range of measured, observed and derived variables. The system should manipulate, organize and accelerate the availability of data. It is anticipated that this would be of value in the delivery of better patient care, useful for teaching and research, and hopefully, result in increased staff efficiency. Critical examination of several facets of these sytems will disclose that anticipated benefits are not often realized.

Available Technology

Applications such as routine hemodynamic calculations have been performed with programmable calculators or personal computers. These small application packages, although very useful, were most often accomplished at a local level and were not uniform from one institution to the next. Computer technology in the ICU has thus largely been introduced and promoted in association with monitoring systems.

Monitors formerly were simple signal amplifiers, that is, they accepted an electrical signal from a transducer and displayed a calibrated and

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amplified version of the signal. The newer generations of monitors are now based on digital electronics and microprocessors. They are built with computer electronics. Computers do two things well: 1) storage and retrieval of data, and 2) execution of algorithms. An algorithm is an invariable set of instructions which is used to perform a specific task. Consequently, the tendency or emphasis has been on data acquisition and data management with information systems.

The most basic application of the microprocessor-based monitor is the waveform display. Monitors now digitize the physiologic signal waveform. That is, the actual waveform is sampled at a given frequency, changing the waveform from a continuous entity to a set of points. The set of points can then be manipulated by an algorithm—for example, to smooth the signal. Thus, digitization of the signal allows the application of computer algorithms to be performed on the data.

This sampling process has led to the concept of trending. It is very easy for the monitor to permanently store the sample points for the heart rate, blood pressure or any measured signal very frequently, say every 30 seconds. The only limit is the electronic memory necessary to store the information. Trend plots can then be formulated for a particular period of time. This information is generally accumulated for a 24-hour period or increments thereof.

Arrhythmia analysis is another application that is made possible by sampling the ECG. Using computer electronics, very complex analysis algorithms are easily applied to the set of data points representing the ECG signal. Some algorithms are so complex that a separate computer is used for analysis and the information is channeled to the computer from the monitor. Microelectronic technology continues to produce smaller hardware packages so that such analysis may be performed within the bedside monitor. In this way the application may be efficiently tailored to a particular patient.

The most ambitious use of computer technology involves the monitoring system in a large-scale information network. These systems include automatic capture or manual entry of various monitoried physiologic functions, observations and test results. Epidemiologic patient information may also be input. Manual entry of data is invariable, done by typing information into the system via a keyboard. Data presentation provides a mechanism to log all pertinent information in a very organized and timely fashion.

There are generally two approaches to the concept of data management. Some systems rely on a centralized approach where information is gathered at remote sites, such as the bedside, STAT lab, main lab, central station, etc., and relayed to a common area for processing. The information is then available at specific peripheral sites. For example, there may be one or two output devices within a unit where observation and interpretation of output is expected to occur. The alternative approach uses the same information gathering scheme, but processing and display is expected to occur at the bedside. This is a truly distributed system with respect to output. Data storage would, of course, be most efficiently handled at a common site for both system approaches.

Most new generation monitors also utilize computer electronics to perform application specific functions. They have the capability to perform hemodynamic respiratory, renal and drug dosage calculations, for example. Data entry for these applications is usually via a keyboard or hand-held keypad, and reporting of results is immediate.

Computer technology for the ICU is available and can create useful output but may also add to the information burden. It simply has not been possible to predict or demonstrate the most efficient or appropriate use of this technology in the ICU. Those limitations within available technology and the precautions needed to assure correct data input to assure reliable information output will be discussed next month in Part 2.

Primary Gastric Lymphoma

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Abstract

Gastric lymphoma is rising in incidence and is difficult to distinguish clinically from adenocarcinoma. Standard treatment is by conservative gastrectomy. Adjuvant radiation therapy is particularly useful if the perigastric lymph nodes, surgical margins or free serosal surfaces are involved. Adjuvant chemotherapy may be useful for advanced lesions. Overall survival is approximately 80% if the perigastric lymph nodes are not involved and 40% if they are.[5]

THE GASTROINTESTINAL tract is the primary site of involvement in approximately 2.5% of malignant lymphomas. The stomach in particular is the most common extranodal site.[1] Gastric lymphoma accounts for 1-11% of gastric neoplasms in collected series.[2] The relative proportion of gastric lymphomas to adenocarcinomas is rising. The treatment and prognosis of these two malignancies are different and therefore an enhanced familiarity with gastric lymphomas is necessary.

Presentation and Diagnosis

The most common presenting complaints associated with gastric lymphomas are epigastric pain, weight loss, nausea and vomiting and melena.[3] The physical exam may be entirely normal but abdominal tenderness and mass are each present in about one-third of cases. Upper gastrointestinal radiographs are usually abnormal but infrequently diagnostic. Polypoid masses and ulcerations may be seen but thickened gastric folds and contiguous duodenal involvement are more characteristic of lymphomas. Gastroscopy with biopsy is diagnostic in up to 88% of cases,[4] depending largely on the skill of both the endoscopist and pathologist. This is the most specific diagnostic modality but yields less than 50% are commonly reported.[5]

Abdominal CT scanning may reveal characteristic thickened gastric walls, but is primarily utlilized for staging. Bone marrow aspiration and surgical exploration are the most accurate staging modalities. The clinical presentation and the radiographic and endoscopic appearance may be entirely indistinguishable from adenocarcinoma.

Treatment and Prognosis

The standard treatment of gastric lymphoma has been surgical excision with or without radiation therapy. Rationale for surgery includes complete confidence in diagnosis, accurate staging, avoidance of hemorrhage and perforation occasionally encountered with non-operative therapy, and up to a 65% cure rate observed with surgery alone.[1,5,6] Extended gastric resections advocated for adenocarcinomas do not seem to result in any survival advantage over conservative resection with margins.[1,6] Adjunctive radiation has improved survival in some series with five-year survival of 85% reported when more than 2,000 rads are used.[1] Adjuvant radiotherapy is particularly efficacious when there is regional lymph node, surgical margin or serosal surface involvement with the lymphoma.[6]

Alternatively, primary therapy with combined radiation and chemotherapy (without surgery) has been advocated.[4] This is initiated if a definite diagnosis can be made from an endoscopic biopsy. Early experience with 13 patients so treated looks favorable but longer follow-up and collaborative reports are needed. Non-operative management also entails a risk of tumor hemorrhage and perforation.

Chemotherapy has been used most as a salvage treatment and its role as an adjuvant is largely unknown. A potential improvement in survival with systemic therapy is plausible in light of the fact that the most common site for treatment failure following surgery and radiation is the extra-abdominal lymph nodes.[1] Thus, adjuvant chemotherapy has been advocated for more advanced disease with lymph node involvement.[5] The long-term risks of aggressive chemotherapy are unknown.

Summary

Gastric lymphoma is rising in incidence and is difficult to distinguish clinically from adenocarcinoma. Standard treatment is by conservative gastrectomy. Adjuvant radiation therapy is particularly useful if the perigastric lymph nodes, surgical margins or free serosal surfaces are involved. Adjuvant chemotherapy may be useful for advanced lesions. Overall survival is approximately 80% if the perigastric lymph nodes are not involved and 40% if they are.[5]

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FIGURE 1: Upper G.I. demonstrating thickened folds in body and fundus, as well as a mass effect along the greater curve.



FIGURE 2: Opened specimen revealing ulcerating lesion with humped-up margins.

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Evaluation of the Floppy Infant, or Congenital Hypotonia

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HYPOTONIA IS THE most common motor abnormality observed in neonatal neurological disorders.[1] It is a symptom that may result from a number of causes. The first fully described cause was familial progressive spinal muscular atrophy, which was reported by Werdnig in 1891[2] and Hoffmann in 1893[3] and now bears their names. In 1900, Oppenheim[4] described two children with nonprogressive congenital hypotonia and called their disease myotonia congenita, a name later changed to amyotonia congenita. Hypotonic infants were placed into one of two groups: progressive or nonprogressive. Subclassification has become possible over the years with the advent of more diagnostic techniques.

Hypotonia can be caused by disorders of the central nervous system, spinal cord, lower motor neuron, neuromuscular junction, peripheral nerve, or muscle. The history, examination and laboratory studies of the hypotonic infant are all aimed at determining what level of the nervous system is diseased.

The pathophysiology of hypotonia can be best understood by considering the factors that determine normal muscle tone, i.e., the elastic properties of muscle, joint and tendon resistance, and the tonic stretch reflexes.[5] The first two properties depend upon the molecular configuration of the muscles, joints and tendons. The tonic stretch reflex depends upon the gamma motoneurons in the spinal cord whose afferent input is from muscle spindles and whose efferent fibers terminate on the spindles. The muscle spindle consists of sensory endings plus contractile (intrafusal) fibers separated from usual (extrafusal muscle fibers). The spindle signals the difference in length between intrafusal and extrafusal fibers. Since the key to normal tone is thought to be the gamma system, hypofunction of modifiers of this system results in hypotonia. The modifiers include the cerebellum, reticular formation, basal ganglia, thalamus, parietal cortex, and, in the spinal cord, the internuncial and Renshaw cells.

Clinical Features

The clinical features of the hypotonic infant are: bizarre or unusual postures, e.g., frog posture; decreased resistance to passive movement; and increased range of motion of joints. The infant's resting posture and his posture in ventral suspension and when pulled to sit should be assessed. Since hypotonia is a normal feature of the preterm infant, gestational age must be known prior to neuromuscular evaluation.

Findings associated with hypotonia include a weak cry and suck, respiratory difficulty, and decreased body movements. History establishes whether these symptoms are acute, subacute, or chronic; static or progressive; focal or diffuse; and sporadic or familial. Examination assesses the muscle stretch reflexes (MSR) and primitive reflexes. Note is made of pathologic reflexes. Strength, muscle mass, and muscle tone are carefully assessed.

When faced with an infant whose hypotonia cannot be explained by prematurity, the first question to ask is whether or not the hypotonia is associated with significant weakness. If an infant is able to move his extremities against gravity or to maintain the posture of a passively elevated limb, he does not have significant weakness. In neuromuscular disorders, weakness and hypotonia are of a similar degree of severity. In nonparalytic, or central hypotonia, tone is diminished to a much greater extent than strength. If muscle stretch reflexes are brisk in a hypotonic infant, a central causation is likely, and as the infant grows older a commensurate delay in intellectual milestones would not be unexpected.

Laboratory Studies

Laboratory studies include muscle enzymes (creatine kinase (CK), serum glutamic oxaloacetic transaminase (SGOT), electromyography (EMG), and nerve conduction velocities (NCV). Cerebrospinal fluid (CSF) protein is determined in selected cases. A muscle biopsy is done in the presence of weakness. A computed tomography (CT) study of the head is done when a central causation is likely.

Elevation of muscle enzymes suggests disease of the muscle, but normal values do not rule out myopathies. Nerve conduction velocities can distinguish between polyneuropathies in which both sensory and motor find-

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ings are abnormal, and anterior horn cell disease in which only motor nerve conduction abnormalities are found. Repetitive nerve stimulation can establish the presence of diseases of the neuromuscular junction, e.g., myasthenia gravis and botulism. Electromyography is useful in distinguishing myopathic from neurogenic disease. It can aid in selecting a suitable muscle for a biopsy. When there is a family history of neuromuscular disease, EMG can be used to confirm a highly suspect case.

Electromyography is an established clinical tool. It is a logical extension of the neurological examination of any patient with signs or symptoms of neuromuscular nature, and traditionally includes: motor and sensory conduction velocities and potential amplitudes; F-wave; and needle exam. The Hoffman (H) reflex is measured in selected cases.

EMG studies in infants are technically more difficult than in adults, and normative data for infants are not as well established as in adults. Norms are available for motor nerve conduction studies and for the Hoffman (H) reflex and the F-wave,[6] but normal data for sensory parameters in infants have not been published.[7] Needle examination is technically more difficult in infants but can be performed satisfactorily by an experienced examiner. Primitive reflexes are used to activate muscles, and muscles inactive at the patient's developmental stage are used to assess at-rest activity.

Muscle biopsy can establish whether a disease is myopathic or neurogenic. Enzyme histochemistry and/or electronmicroscopy of biopsy material can further characterize morphologically distinct myopathies, including the congenital myopathies. Biochemical study of biopsy material can aid in diagnosis and may elucidate metabolic deficits.

Clinical Entities

Arthrogryposis multiplex congenita is a syndrome that results from decreased movement in utero. It is a common manifestation of many neuromuscular diseases. When confronted with an arthrogrypotic infant, one must carry out the laboratory studies described above in order to diagnose the neuromuscular disease responsible for the decreased fetal movement.

Hypoxic-ischemic encephalopathy is by far the most common cause of all hypotonia in the newborn. Other causes of encephalopathy that can result in hypotonia include intracranial hemorrhage, infection, metabolic abnormalities, endocrine dysfunction and degenerative disorders. Traumatic and congenital spinal cord disorders may also result in hypotonia.

Disorders of the lower motor neuron are the most common cause of severe hypotonia and weakness in the newborn. Werdnig-Hoffman disease is the most common in this category. It is an autosomal recessive form of anterior horn cell degeneration. The course is usually rapidly progressive, with most patients dying in the first year of life of respiratory complications.

Some of the diseases of peripheral nerve that can result in hypotonia and weakness include the following: Krabbe's, metachromatic leukodystrophy, Fabry's, Refsum's, Dejerine-Sottas, Charcot-Marie-Tooth and Friedreich's. These diseases generally present after the newborn period.

Diseases of the neuromuscular junction that may cause hypotonia in newborns include myasthenia gravis and hypermagnesemia, both of which have a decremental response to nerve stimulation. Botulism produces characteristic brief duration, small amplitude potentials on EMG.

The myopathic processes that may present in newborns can be divided into two broad categories: those with distinctive histology and those without. The most common disease of this group is myotonic dystrophy, which is without distinctive histology. Myotonia is not present in the newborn period but can be elicited from the mother, who almost always has transmitted the disease. The other muscular dystrophies, e.g., Duchenne's, facioscapular humeral, Becker's, and limb girdle, generally present after the newborn period.

The morphologically distinct myopathies have received much attention since the first, central core disease was described in 1956.[8] What they all have in common is that muscle biopsy is diagnostic. These diseases are no longer called benign congenital myopathies, as numerous instances of rapidly fatal cases have been reported.

The mitochondrial myopathies are due to a structural abnormality of the mitochondria and are diagnosed by electron microscopy. Metabolic myopathies are characterized by abnormalities in glycogen or lipid metabolism.

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Classification System for HTLV-III/ Lymphadenopathy-Associated Virus Infections*

PERSONS INFECTED with the etiologic retrovirus of acquired immunodeficiency syndrome (AIDS)[1-4] may present with a variety of manifestations ranging from asymptomatic infection to severe immunodeficiency and life-threatening secondary infectious diseases or cancers. The rapid growth of knowledge about human T lymphotropic virus type III/lymphadenopathy-associated virus (HTLV-III/LAV) has resulted in an increasing need for a system of classifying patients within this spectrum of clinical and laboratory findings attributable to HTLV-III/LAV infection.[5,7]

Various means are now used to describe and assess patients with manifestations of HTLV-III/LAV infection and to describe their signs, symptoms, and laboratory findings. The surveillance definition of AIDS has proven to be extremely valuable and quite reliable for some epidemiologic studies and clinical assessment of patients with the more severe manifestations of disease. However, more inclusive definitions and classifications of HTLV III/LAV infection are needed for optimum patient care, health planning, and public health control strategies, as well as for epidemiologic studies and special surveys. A broadly applicable, easily understood classification system should also facilitate and clarify communication about this disease.

In an attempt to formulate the most appropriate classification system, CDC has sought the advice of a panel of expert consultants to assist in defining the manifestations of HTLV-III/LAV infection (*Table 1*).

Goals and Objectives of the Classification System

The classification system presented in this report is primarily applicable to public health purposes, including disease reporting and surveillance, epidemiologic studies, prevention and control activities, and public health policy and planning.

Immediate applications of such a system include the classification of infected persons for reporting of cases to state and local public health agencies, and use in various disease coding and recording systems, such as the forthcoming 10th revision of the International Classification of Diseases.

Definition of HTLV-III/LAV Infection

The most specific diagnosis of HTLV-III/LAV infection is by direct identification of the virus in host tissues by virus isolation; however, the

TABLE 1
CDC Review Panel

The Centers for Disease Control, in an attempt to formulate the most appropriate classification system, sought the advice of the following expert consultants to assist in defining the manifestations of HTLV-III/LAV infection:

D.S. Burke, M.D., and R.R. Redfield, M.D., Walter Reed Army Institute of Research, Washington, D.C.;

J. Chin, M.D., State Epidemiologist, California Dept. of Health Services;

L.Z. Cooper, M.D., St. Luke's-Roosevelt Hospital Center, New York City;

J.P. Davis, M.D., State Epidemiologist, Wisconsin Division of Health;

M.A. Fischl, M.D., University of Miami School of Medicine, Miami, Fla.;

G. Friedland, M.D., Albert Einstein College of Medicine, New York City;

M.A. Johnson, M.D., and D.I. Abrams, M.D., San Francisco General Hospital;

D. Mildvan, M.D., Beth Israel Medical Center, New York City;

C.U. Tuazon, M.D., George Washington University School of Medicine, Washington, D.C.;

R.W. Price, M.D., Memorial Sloan-Kettering Cancer Center, New York City;

C. Konigsberg, M.D., Broward County Public Health Unit, Fort Lauderdale, Fla.;

M.S. Gottlieb, M.D., University of California-Los Angeles Medical Center;

Representatives of the National Institute of Allergy and Infectious Diseases, National Cancer Institute, National Institutes of Health, Center for Infectious Diseases, CDC.

*The AIDS virus has been variously termed human T-lymphotropic virus type III (HTLV-III), lymphadenopathy-associated virus (LAV), AIDS-associated retrovirus (ARV), or human immunodeficiency virus (HIV). The designation human immunodeficiency virus (HIV) was proposed recently by a subcommittee of the International Committee for the Taxonomy of Viruses as the appropriate name for the retrovirus that has been implicated as the causative agent of AIDS.[4]

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techniques for isolating HTLV-III/LAV currently lack sensitivity for detecting infection and are not readily available. For public health purposes, patients with repeatedly reactive screening tests for HTLV-III/LAV antibody (e.g., enzyme-linked immunosorbent assay) in whom antibody is also identified by the use of supplemental tests (e.g., Western blot, immunofluorescence assay) should be considered both infected and infective.[8-10]

Although HTLV-III/LAV infection is identified by isolation of the virus or, indirectly, by the presence of antibody to the virus, a presumptive clinical diagnosis of HTLV-III/LAV infection has been made in some situations in the absence of positive virologic or serologic test results. There is a very strong correlation between the clinical manifestations of AIDS as defined by CDC and the presence of HTLV-III/LAV antibody.[11-14] Most persons whose clinical illness fulfills the CDC surveillance definition for AIDS will have been infected with the virus.[12-14]

Classification System

This sytem classifies the manifestations of HTLV-III/LAV infection into four mutually exclusive groups, designated by Roman numerals I through IV (*Table 2*). *The classification system applies only to patients diagnosed as having HTLV-III/LAV infection (see previous section,* **Definition of HTLV-III/LAV Infection**). Classification in a particular group is not explicitly intended to have prognostic significance, nor to designate severity of illness. However, classification in the four principal groups, I-IV, is hierarchical in that persons classified in a particular group should not be reclassified in a preceding group if clinical findings resolve, since clinical improvement may not accurately reflect changes in the severity of the underlying disease.

Group I includes patients with transient signs and symptoms that appear at the time of, or shortly after, initial infection with HTLV-III/LAV as identified by laboratory studies. All patients in Group I will be reclassified in another group following resolution of this acute syndrome.

TABLE 2
Summary of Classification System for Human T-Lymphotropic Virus Type III/Lymphadenopathy-Associated Virus

Group I.	Acute infection
Group II.	Asymptomatic infection*
Group III.	Persistent generalized lymphadenopathy*
Group IV.	Other disease
Subgroup A.	Constitutional disease
Subgroup B.	Neurologic disease
Subgroup C.	Secondary infectious diseases
Category C-1.	Specified secondary infectious diseases listed in the CDC surveillance definition for AIDS†
Category C-2.	Other specified secondary infectious diseases
Subgroup D.	Secondary cancers†
Subgroup E.	Other conditions

*Patients in Groups II and III may be subclassified on the basis of a laboratory evaluation.
†Includes those patients whose clinical presentation fulfills the definition of AIDS used by CDC for national reporting.

Group II includes patients who have no signs or symptoms of HTLV-III/LAV infection. Patients in this category may be subclassified based on whether hematologic and/or immunologic laboratory studies have been done and whether results are abnormal in a manner consistent with the effects of HTLV-III/LAV infection.

Group III includes patients with persistent generalized lymphadenopathy, but without findings that would lead to classification in Group IV. Patients in this category may be subclassified based on the results of laboratory studies in the same manner as patients in Group II.

Group IV includes patients with clinical symptoms and signs of HTLV-III/LAV infection other than or in addition to lymphadenopathy. Patients in this group are assigned to *one or more* subgroups based on clinical findings. These subgroups are: A. constitutional disease; B. neurologic disease; C. secondary infectious diseases; D. secondary cancers; and E. other conditions resulting from HTLV-III/LAV infection. There is no *a priori* hierarchy of severity among subgroups A through E, and these subgroups are not mutually exclusive.

Definitions of the groups and subgroups are as follows:

Group I. Acute HTLV-III/LAV Infection. Defined as a mononucleosis-like syndrome, with or without aseptic meningitis, associated with seroconversion for HTLV-III/LAV antibody.[15-16] Antibody seroconversion is required as evidence of initial infection; current viral isolation procedures are not adequately sensitive to be relied on for demonstrating the onset of infection.

Group II. Asymptomatic HTLV-III/LAV Infection. Defined as the absence of signs or symptoms of HTLV-III/LAV infection. To be classified in Group II, patients must have had no previous signs or symptoms that would have led to classification in Groups III or IV. Patients whose clinical findings caused them to be classified in Groups III or IV should not be reclassified in Group II if those clinical findings resolve.

Patients in this group may be subclassified on the basis of a laboratory evaluation. Laboratory studies commonly indicated for patients with HTLV-III/LAV infection include, but are not limited to, a complete

blood count (including differential white blood cell count) and a platelet count. Immunologic tests, especially T-lymphocyte helper and suppressor cell counts, are also an important part of the overall evaluation. Patients whose test results are within normal limits, as well as those for whom a laboratory evaluation has not yet been completed, should be differentiated from patients whose test results are consistent with defects associated with HTLV-III/LAV infection (e.g., lymphopenia, thrombocytopenia, decreased number of helper [T_4] T-lymphocytes).

Group III. Persistent Generalized Lymphadenopathy (PGL). Defined as palpable lymphadenopathy (lymph node enlargement of 1 cm or greater) at two or more extra-inguinal sites persisting for more than three months in the absence of a concurrent illness or condition other than HTLV-III/LAV infection to explain the findings. Patients in this group may also be subclassified on the basis of a laboratory evaluation, as is done for asymptomatic patients in Group II (see above). Patients with PGL whose clinical findings caused them to be classified in Group IV should not be reclassified in Group III if those other clinical findings resolve.

Group IV. Other HTLV-III/LAV Disease. The clinical manifestations of patients in this group may be designated by assignment to one or more subgroups (A-E) listed below. Within Group IV, subgroup classification is independent of the presence or absence of lymphadenopathy. Each subgroup may include patients who are minimally symptomatic, as well as patients who are severely ill. Increased specificity for manifestations of HTLV-III/LAV infection, if needed for clinical purposes or research purposes or for disability determinations, may be achieved by creating additional divisions within each subgroup.

Subgroup A. Constitutional disease. Defined as one or more of the following: fever persisting more than one month, involuntary weight loss of greater than 10% of baseline, or diarrhea persisting more than one month; and the absence of a concurrent illness or condition other than HTLV-III/LAV infection to explain the findings.

Subgroup B. Neurologic disease. Defined as one or more of the following: dementia, myelopathy, or peripheral neuropathy; and the absence of a concurrent illness or condition other than HTLV-III/LAV infection to explain the findings.

Subgroup C. Secondary infectious diseases. Defined as the diagnosis of an infectious disease associated with HTLV-III/LAV infection and/or at least moderately indicative of a defect in cell-mediated immunity. Patients in this subgroup are divided further into two categories:

Category C-1. Includes patients with symptomatic or invasive disease due to one of 12 specified secondary infectious diseases listed in the surveillance definition of AIDS[§]: *Pneumocystis carinii* pneumonia, chronic cryptosporidiosis, toxoplasmosis, extraintestinal strongyloidiasis, isosporiasis, candidiasis (esophageal, bronchial, or pulmonary), cryptococcosis, histoplasmosis, mycobacterial infection with *Mycobacterium avium* complex or *M. kansasii*, cytomegalovirus infection, chronic mucocutaneous or disseminated herpes simplex virus infection, and progressive multifocal leukoencephalopathy.

Subgroup D. Secondary cancers. Defined as the diagnosis of one or more kinds of cancer known to be associated with HTLV-III/LAV infection as listed in the surveillance definition of AIDS and at least moderately indicative of a defect in cell-mediated immunity[¶]: Kaposi's sarcoma, non-Hodgkin's lymphoma (small, noncleaved lymphoma or immunoblastic sarcoma), or primary lymphoma of the brain.

Subgroup E. Other conditions in HTLV-III/LAV infection. Defined as the presence of other clinical findings or diseases, not classifiable above, that may be attributed to HTLV-III/LAV infection and/or may be indicative of a defect in cell-mediated immunity. Included are patients with chronic lymphoid interstitial pneumonitis. Also included are those patients whose signs or symptoms could be attributed either to HTLV-III/LAV infection or to another coexisting disease not classified elsewhere, and patients with other clinical illnesses, the course or management of which may be complicated or altered by HTLV-III/LAV infection. Examples include: patients with constitutional symptoms not meeting the criteria for subgroup IV-A; patients with infectious diseases not listed in subgroup IV-C; and patients with neoplasms not listed in subgroup IV-D.

Editorial Note: The classification system is meant to provide a means of grouping patients infected with HTLV-III/LAV according to the clinical expression of disease. It will require periodic revision as warranted by new information about HTLV-III/LAV infection. The definition of particular syndromes will evolve with increasing knowledge of the significance of certain clinical findings and laboratory tests. New diagnostic techniques, such as the detection of specific HTLV-III/LAV antigens or antibodies, may add specificity to the assessment of patients infected with HTLV-III/LAV.

The classification system defines a limited number of specified clinical presentations. Patients whose signs and symptoms do not meet the criteria for other groups and subgroups, but whose findings are attributable to HTLV-III/LAV infection, should be classified in subgroup IV-E. As the classification system is revised and up-

[§]This subgroup includes patients with one or more of the specified infectious diseases listed whose clinical presentation fulfills the definition of AIDS as used by CDC for national reporting.

[¶]This subgroup includes those patients with one or more of the specified cancers listed whose clinical presentation fulfills the definition of AIDS as used by CDC for national reporting.

dated, certain subsets of patients in subgroup IV-E may be identified as having related groups of clinical findings that should be separately classified as distinct syndromes. This could be accomplished either by creating additional subgroups within Group IV or by broadening the definitions of the existing subgroups.

Persons currently using other classification systems[6-7] or nomenclatures (e.g., AIDS-related complex, lymphadenopathy syndrome) can find equivalences with those systems and terminologies and the classification presented in this report. Because this classification system has only four principal groups based on chronology, presence or absence of signs and symptoms, and the type of clinical findings present, comparisons with other classifications based either on clinical findings or on laboratory assessment are easily accomplished.

This classification system does not imply any change in the definition of AIDS used by CDC since 1981 for national reporting. Patients whose clinical presentations fulfill the surveillance definition of AIDS are classified in Group IV. However, not every case in Group IV will meet the surveillance definition.

Persons wishing to comment on this material are encouraged to send comments in writing to the AIDS Program, Center for Infectious Diseases, CDC.

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Physician Recognition Awards

The following ISMA physicians are recent recipients of the AMA's Physician Recognition Award. This award is official documentation of Continuing Medical Education hours earned, and is acceptable proof in most states requiring CME in re-registration that the mandatory hours of CME have been accomplished.

Artis, Myrle E., Kokomo
Chen, James J., Munster
Chu, Johnson C., Walton
Curtis, Larry T., Evansville
Elliott, Edward F., Carmel
Fischer, A. Alan, Indianapolis
Galup, Luis N., South Bend
Good, Richard L., Munster
Hamed, Latif M., Indianapolis
Hoff, Kenneth E., Rochester
Irwin, Gerald P., Alexandria
Jenison, James E., Indianapolis
LaFollette, James W., Bloomington
Larkin, Gregory N., Greencastle
Lloyd-Jones, Trevor T., New Palestine
Lucas, John T., Fort Wayne
Maestro, Calvin J., Munster
McCoy, Melvin H., Evansville
Panszi, Jose G., Muncie
Purcell, Richard J., Griffith
Rahdert, Richard F., West Lafayette
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Resident Physician Essay Contest

During the 1986-87 resident training year the Resident Medical Society of the ISMA and INDIANA MEDICINE will conduct a medical essay contest. All members of the Resident Medical Society are eligible to enter. Each author may choose the subject. Essays (medical articles) will be limited in length to 10 pages of typescript, properly margined and double spaced. Illustrations are encouraged and are to be included in the space limitation. Each article submitted should not have been published previously and should be credited to one author only.

Entries should be mailed to INDIANA MEDICINE, 3935 N. Meridian St., Indianapolis 46208, and be postmarked prior to Jan. 1, 1987.

Judges will consist of two specialists within the field of the article, three medical education directors from Indiana institutions with approved residency training programs, and one member of the INDIANA MEDICINE Editorial Board.

Authors of the articles judged to be the four best will receive prizes of $100 each, and an additional $100 prize will be given to the best article of the four.

All prize-winning articles will be published in INDIANA MEDICINE. It is hoped that space will allow the publication of other entries to be chosen in the order of their numerical scores.

Essays will be judged on the following criteria:

SCIENTIFIC MERIT: Research methods, data analysis, subject or patient population selection, control of variables, literature analysis.

APPLICABILITY: Usefulness of results to private practitioner, academician, researcher.

CONTENT: Depth of analysis, continuity of discussion supporting the main thesis, feasibility of conclusions.

INNOVATION: Uniqueness of idea, creativity, improvement of existing techniques, previously undiscovered data, advancement of basic understanding.

Each essay will be assigned a numerical score for each of the four judging criteria by each judge as follows:

0 Unacceptable	3 Good
1 Poor	4 Above average
2 Fair	5 Excellent

A Survey of Filing Systems for the Medical Literature

Resident Medical Society Award-Winning Essay

First Prize Winner, Resident Medical Society Essay Contest

MARK A. HOCHSTETLER, M.D.
Beech Grove

Abstract

Continuing self-education is an important aspect of modern medical practice. A significant portion of this process is the assimilation of an increasing volume of medical literature in an orderly, meaningful manner. For the busy physician, the most practical solution to this herculean task may be a personal medical filing system. This article attempts to survey the different approaches to medical literature filing systems, which range from the very simple (and inexpensive) to the fairly sophisticated (and perhaps expensive). I will attempt to make some recommendations in light of a busy physician's educational needs, time constraints, and budget, and offer some suggestions to make the task of setting up such a system a little easier.

THE PROCESS OF READING and retaining the information in medical journal articles, acknowledged as an important aspect of continuing medical education, is a task whose successful completion is constantly threatened by the burgeoning mass of journals available. Most community hospital libraries have an average of 300 titles available, medical libraries 1500+, and the Index Medicus now lists 4,177 journals and adds 250,000 articles each year.[1] How does a busy practitioner keep up and how does he do it in a way that is relatively simple, inexpensive and time-saving?

For the physician, the practical solution may be a personal filing system. This system would enable the physician to do the following: 1) continue his self-education in an orderly manner, 2) compose lectures and bibliographies easily, 3) quickly retrieve a given article, and 4) perhaps be able to purchase fewer textbooks in order to remain current with changes in the field.[2] To successfully accomplish these goals, the system should meet several requirements:

1. A reference index that provides consistent, unambiguous terminology.
2. Unlimited potential for expansion and subcategorization.
3. Rapid retrieval with minimal overselection.
4. Simple, inexpensive maintenance, refiling, and update/purge functions.

Dr. Hochstetler, a Graduate Fellow (PGY-4) in Family Practice at St. Francis Hospital in Beech Grove, Ind., prepared this article for the 1985-86 medical essay contest sponsored by the Resident Medical Society of the Indiana State Medical Association and by INDIANA MEDICINE. The article was picked by the judges for first prize.

Indexing

The first step in establishing a system is to select or create an index. The index is the component of the system which classifies articles for initial filing, acts as the guide for retrieving articles, and maintains the consistent terminology in use. Because this is the framework within which the system will operate, care in its selection will reward you later on as the system grows larger and more complex. There are three basic approaches to indexing a system: alphabetical, categorical, and by keyword.

Alphabetical Indexing: The alphabetical system groups articles by the first letter of their topics. Such a system may be useful in some very specialized disciplines, but is felt to be unsuitable for general use.[3] By the very nature of the system it is difficult to maintain consistent terminology (i.e., is "SBE" found under H for heart, C for cardiology, or I for infection?). In other words, a major disadvantage of this approach is that it lacks an unambiguous structure.

Categorical Indexing: The categorical system is widely advocated by many authors and is probably the most widely used, noncomputer-based system. It is further divided into several approaches: simple, textbook-based, and numerical.

A relatively simple indexing system consists of reprints grouped into large subject categories and filed under those headings.[4] The advantage of this sytem is that it is very simple to establish. However, it soon becomes

very cumbersome to maintain as the number of articles increases and, it doesn't allow for cross-referencing, which can make retrieval of a given article difficult. As such, it often evolves into one of the more sophisticated categorical approaches.

The textbook-based approach involves selecting a textbook which encompasses one's field of interest.[2,5,6] File headings are taken from the table of contents and, when in doubt about the placement of a particular article, one merely looks up the subject in the textbook's index to place it in the proper file. The key to this approach is to select the text carefully. For example, in general internal medicine, the Beeson-McDermott Textbook of Medicine[7] is organized along organ systems, while Harrison's Principles of Internal Medicine[8] is more symptom oriented. If you have a particular interest in a subject, you may need to consult a specialty textbook in that area in order to set up subcategories.[9] This textbook-based approach is attractive because it provides a logical framework and fairly quick access to the retrieval process, but it is often criticized because it lacks the flexibility to incorporate new areas of interest and tends to become outdated quickly. Multiple-topic articles and the subsequent problems of inconsistent terminology and cross-referencing also present areas of concern.

Numerical systems use either blocks of numbers, decimals, or alphanumeric symbols to represent categories and subcategories. A variation of the textbook-based system assigns numbers to the headings in the textbook and is a type of numerical system.[2] Other sources of organization include the ICD-9-CM,[1] the National Library of Medicine Classification System,[10] the International Classification of Health Problems in Primary Care,[11] Kipp's numerical system[12] the Excerpta Medica,[13,14] and numerous other numerical systems developed for other specialties.[15-19] The advantages of this system are that cross-referencing, new subject expansion, and subcategorization are easily accomplished. Rapid retrieval and refiling are possible and the time required for upkeep is minimal. However, it requires someone who is familiar with the terminology and the complex indices to appropriately file under this system. A partial solution to this problem is to use a simple general index, such as Kipp's, and to maintain a separate core index of the most commonly utilized subjects for reference by you and your staff.

Keyword Indexing: A third approach to indexing medical literature is to use keywords. This involves reviewing the abstract/article for several key ideas/words and then entering the article into a central index of key words.[20] The article is then listed under each of those keywords. The central index can be either a card file or a computer database program. This system is a good approach for complex, interrelated topics and allows quick, effective cross-referencing and, therefore, fast retrieval with a minimum of overselection. However, it can be very time-consuming to enter the data. It also requires unambiguous, consistent terminology in order to work well.[21] As a result, this approach is less cumbersome when used in a narrowly defined field of interest.

Computer Indexing

As more and more physicians purchase or gain access to computers, especially microcomputers such as the Apple II series or the IBM-PC the use of this technology in literature filing will grow. A recent nation-wide survey of 60,000 physicians showed that 34% of them either own, rent, or have access to a personal computer or terminal. In addition, 16% indicated that they intend to buy equipment within the next year.[22] Therefore, a major part of this article is devoted to reviewing the software available.

As mentioned above, the keyword approach is also the one used in developing computer-based systems. Here, some of the tedium of entering multiple items and sorting long searches is handled by the computer, a distinct advantage over the index card systems. Articles can usually be sorted by author, title, journal, year, or keyword(s), and a report generated with a list of articles for reference or bibliography. Cross-referencing is easily done, both in entry and retrieval. Also, articles which cannot be easily copied or which are found in bound volumes can be easily entered into the system. The disadvantages include the need for a clerical staff to enter the data, inaccessibility to the data if the computer is "down," and the possibility of technological overkill for what may be a simple task using one of the other systems. An important consideration, of course, is the cost of the software/hardware combination.

The software available for computers ranges from the very simple "filecard" databases to the very sophisticated, programmable databases. The filecard programs, such as PFS:File[23] and PC-File,[24] often lack sophisticated sort/search functions and usually have limited report-generation capabilities. More sophisticated databases, such as dBase III[25] and Perfect Filer,[26] usually require someone with programming skills who must then develop their own custom templates. The best of both worlds may be found in software which is specialized to perform literature filing.

This software includes such software as Quick Search Librarian (QLS),[27] Bookends,[28] Bibliotek,[29] and Litmas[30] for the Apple II series; and Notebook,[31] Sapana: Card File,[32] Personal Text Manager,[33] MedLit Manager,[34] and FOLIO[35] for the MS-DOS and CP/M computers. The criteria for evaluating these programs include:

1. Ease and simplicity of operation.
2. Legibility of the manual.
3. Memory density of the file storage on floppy disks.
4. Ease of the use of multiple keywords in searches.

5. Capability to generate reports.
6. Speed of searches and sorts.
7. Availability of hard-disk storage.
8. Ability to merge data gathered from on-line medical database searches.

An application of these criteria to several of the programs mentioned above may be helpful. QSL is an Apple II program that enjoys the advantages of a relatively fast search/sort function and relatively dense data storage for an Apple (1000 files/143K disk). In contrast, the Bookends program stores less programs per disk, but performs faster searches. The main limitation of QSL is that it allows only 255 keywords; in contrast, Bibliotek allows 750.[36] QSL also has a less sophisticated report generator than the other two, is unable to take advantage of the additional memory in the Apple IIe/c computers, and doesn't have a utility program available to convert MEDLINE data to the database format. Bookends does all these things and also has an Extended version available for hard disk utilization.

For MS-DOS and CP/M computers many programs are available. Notable of these is Notebook, a program that allows the user to establish a dynamic data field, i.e., a field that varies with the entered length of each individual record and, therefore, allows denser data storage. It is also compatible with Bibliography, a program that allows writers of long reports to reformat, reference, and footnote their work. Personal Text Manager is a CP/M-based program that works in tandem with the Universal Online Searcher to download data from on-line databases and store the references in the database program. MedLit Manager and FOLIO are programs that allow you to adopt the dBase database series specifically for medical literature filing. With dBase II your system can handle 65,000 records; dBase III will handle over one billion records.[37] FOLIO is limited to dBase II only.

Suggestions

The following are suggestions for setting up any type of system:

- Develop criteria for the selection of articles in the file. An essential step is to define: 1) what will be scanned for potential selection, and 2) what is the basis for eventual inclusion in the system. It is probably best to select just a few journals that you read regularly and file from them.[10] This allows you to eliminate all the throwaways, non-refereed, or non-peer review journals.[38]
- Include such topics as procedures, practice management, billing systems, and ethics in your index.
- Avoid a "Miscellaneous" file; classify everything by your index system.
- File diagnostic and therapeutic topics under specific clinical problems.
- Number your articles in chronological order as you file them; this will help you when you purge or update your files.
- Develop a "core" index of the subjects that you most frequently use; this allows you to easily categorize an article and enables your staff to easily file and retrieve articles for you.
- Incorporate lecture notes, pamphlets, patient information sheets, and drug information into your files.[1]
- Design your system so that you have to mark only the article or the table of contents of a journal with the keywords. Your clerical staff should be able to do everything else for you.[9]
- File the article immediately, even if unread. The alternative is an article you have glanced at, but now cannot find in your stack of journals.[11]
- Note on the article its value, such as ****, "good illustrations," or DON'T DISCARD.
- If you frequently lend articles from your files, stamp your name on all your papers.
- If an article is in a bound volume, note the citation and keywords on a sheet of paper and enter it into your system when possible.[19]
- Ensure that the maintenance of your file is an essential, scheduled duty of your clerical staff, not a "time-available" project.
- Assess the cost to you, in terms of your time and your clerical staff, of setting up and maintaining your system. Sketch out a flow chart of your system and realistically assess whether you can use your system easily.
- Realize that even your article file is primarily archival. An item is already several months old by the time it enters your files. It is also probably not complete; 100 papers have probably been published on the same topic in the past year.

Conclusion

The need to organize the growing mountain of medical literature available to a physician is a very real and pressing problem. I hope that this survey has presented the different options available and has provoked some discussion on this topic. It is my recommendation that someone establishing a medical filing system use either the numerical or textbook-based categorical approach or, if one has access to a microcomputer, one of the software packages dedicated to literature filing. The other approaches discussed in this paper are either too simplistic to allow the cross-referencing needed, or require too much clerical time to maintain the system.

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25. dBase III ($700) Ashton-Tate, Culver City, CA.
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27. Quick Search Librarian ($75) Interactive Microware Inc., State College, PA.
28. Bookends (DOS 3.3 $125, ProDOS $125, Extended $150) Sensible Software Inc, Birmingham, MI.
29. Bibliotek ($95) Scientific Software Products Inc, Indianapolis.
30. Litmas ($145) Litmas, Worden, MT.
31. Notebook ($125) Digital Marketing Co, Walnut Creek, CA.
32. Sapana: Card File ($195) Sapana Micro Software, Pittsburgh.
33. Sci-Mate Personal Text Manager ($540, $880 with the Universal Online Searcher) Institute for Scientific Information, Philadelphia.
34. MedLit Manager ($30 MS-DOS disk, $10 program printout for non-MS-DOS) Scott Camazine, M.D., Ithaca, NY.
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Look-Alike and Sound-Alike Drug Names

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Look-alike and sound-alike drug names can be misinterpreted by a nurse reading doctors' orders or by a pharmacist compounding physicians' prescriptions. Such misunderstandings can result in the administration of a drug not intended by the prescriber. Awareness of such look-alike and sound-alike drug names can reduce potential errors.

	MANDOL	MEDROL
Category:	Cephalosporin	Glucocorticoid
Brand Name:	Mandol, Lilly	Medrol, Upjohn
Generic Name:	Cefamandole Nafate	Methylprednisolone
Dosage Forms:	Injection	Tablets
	AMITRIL	**EMETROL**
Category:	Antidepressant	Antivertigo/Antiemetic
Brand Name:	Amitril, Parke-Davis	Emetrol, Rorer
Generic Name:	Amitriptyline HCl	Phosphorated Carbohydrate Solution
Dosage Forms:	Tablets	Solution

The Indiana Living Will Act

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The Authors Take a Close Look at the Act in Its Final Form: What It Does, What It Doesn't Do, What's Good About It, What's Not So Good . . .

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HOUSE ENROLLED ACT No. 1075, (I.C. 16-8-11, et seq.) entitled *Living Wills and Life Prolonging Procedures Act* was passed by the 1985 Indiana State Legislature and signed by Governor Orr. The Act, described by its Senate sponsor, Senator William Vobach, as involving neither wills nor living, was finally enacted after a 13-year effort. Its final form reveals the scars of struggle with those groups and individuals concerned about the State speaking officially on behalf of a "Right to Die."

The Act accomplishes essentially the following:

1. It recognizes, rather than creates, the common law right of competent adults to control decisions regarding their own medical care, except under unusual circumstances, even when they have become unable or incompetent to do so later.

2. It outlines the statutory requirements for a Living Will Declaration, including who may do it and how it is to be done, the qualification of witnesses and methods of revocation. It, in fact, offers a suggested format for such a declaration, but does not preclude a common law declaration of similar intent.

3. It establishes protection from prosecution for a physician who in good faith withholds or withdraws a "life supporting procedure" in compliance with a Living Will Declaration. It, in fact, creates an obligation to do so under appropriate circumstances.

4. It assigns to the attending physician the responsibility to determine that the Declaration is valid, that a "terminal" condition exists, and that death would naturally ensue in "a short time."

5. It outlines permissible behavior for a physician who cannot in good conscience act as requested.

6. It specifically excludes "medication," appropriate "nutrition and hydration," and pain relief from procedures which may be denied.

7. It also authorizes an opposite "Life Prolonging Procedures Declaration," suggesting a format, which would demand maximal life support efforts under all circumstances.

Physician Reaction

Physicians may be shocked to learn that the laity has such deep apprehension concerning our ability and will to deal humanely with the dying process. We had thought that physicians, above all others, were aware of a point in illness marking a time to scale back life-prolonging efforts. Physicians have led the fight to legally recognize brain death in lieu of older definitions, have learned to recognize it,[1] and have acted regularly to withdraw inappropriate mechanical life support. Physicians have encouraged the creation of Hospice, a mode of care dedicated solely to provision of comfort and maintenance of patient autonomy, to the exclusion of life prolongation per se.

Physicians, however, have also recognized that the "ultimate horror" of "being maintained in limbo, in a sterile room, by machines controlled by strangers"[2] was an unlikely outcome to life, the frequency of which was wildly exaggerated by media attention, and the occurrence of which was more likely the result of legal interference than medical callousness or fear. Thus, while physicians generally have not perceived a problem with their current handling of such situations in Indiana, they must recognize and accept the fact that many in the general public do perceive such a problem. Most people, when the time comes, wish to die "with dignity" and without the intervention

of extraordinary life-prolonging, but not life-saving, procedures. These people are apparently not convinced that current medical practice would permit them to do so.

Thus, as physicians, we need not be affronted by the efforts of the Legislature to deal with a problem perceived serious by the public, if not by the profession. We might rather, however, have had the Legislature address the vastly greater problem of the incrementally decrepit, wherein decisions regarding medication, nutrition, hydration, and palliative procedures are truly problematic.

Unanswered Questions

The Act leaves many questions unaddressed, and presumably others will arise, as illustrated by the following:

1. What is "a short time," a "life-prolonging procedure," and can relief of discomfort be easily divorced from prolongation of the dying process?
2. What is the obligation of a physician to search for a Living Will and how can he judge its validity?
3. What if members of the immediate family disagree with the Declarant's instructions?
4. Does the Declaration provide protection from civil liability if it turns out that death was not imminent after all, or even inevitable?
5. Does the exclusion of hydration and nutrition from the list of permissible denials create a positive legal obligation for their provision?

Conclusions

The Living Will Act will be greeted by physicians as, at best, a mixed blessing.

Some positive features are:

1. The anxiety which obviously exists in non-medical circles will be lessened.

'The Living Will Act Will Be Greeted by Physicians as, at Best, a Mixed Blessing'

2. The existence of a Living Will Declaration may assuage guilt feelings in a family approving discontinuation of life support.
3. The appointment of a surrogate at the time of execution of a Living Will could be beneficial to an attending physician so long as the surrogate is not in conflict with the wishes of the immediate family.
4. An opportunity for organ donation statements may arise at the time of the Living Will execution.
5. If an Indiana physician is indeed fearfully reluctant to withdraw life support at the appropriate time, he may be reassured.
6. The hand of an over-eager, publicity-seeking prosecutor may be stayed.

Some concerns are:

1. A "living will" mind set could increase medical error. A physician might become complacent in his resolve to facilitate death, thus overlooking opportunity to extend meaningful life.
2. Conversely, increased pressure may be brought to bear by a family armed with such declaration upon a physician whose judgment suggests that meaningful life is still a reasonable possibility.[3]
3. A living will declaration at odds with the wishes of the immediate family creates an additional opportunity for legal confrontation.
4. The specific exclusion of hydration and nutrition could create a positive legal requirement for their provision at all costs.
5. The execution of a life-prolonging Declaration, however unlikely, could create financial and ethical dilemmas for physicians, hospitals and families.
6. Abbreviation of the dying process has recently gathered support from political[4] and economic sources.[5] The concerns of the "Right to Lifers" may therefore not be so exaggerated.
7. The 13-year struggle for passage of this rather benign legislation bodes ill for any legal attempt to address the far greater problems of those unfortunate persons for whom meaningful life has passed, but the rescue of death is distant.

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Medicine's Lighter Moments

TED L. GRISELL, M.D.
Indianapolis

THE CAT



ANOTHER TALE involving the old Fletcher Mental Hospital, the environment mentioned in the previous report, occurred one evening when Dr. Abie Sullinger and I, who had just spent the day studying therapeutics, suddenly came upon the bright idea of testing a reported bizarre effect of morphine on cats and some women.

Dr. B. B. Turner, Ph.D., Professor of Therapeutics at Indiana University, had lectured us that day that morphine generally was a good sedative and analgesic, but one must guard its use due to an occasional bizarre effect. He commented that the bizarre effect was demonstrated by cats and by some women. The correlation of that statement was so unusual that it stuck in our minds.

We were working in the laboratory of the sanitarium, running urine analyses and blood tests. A very large, black angora-type cat, probably of a mixed breed, that belonged to Dr. Mary Spink came strolling into the laboratory. We had just finished making a compilation of the narcotic cabinet and had discovered that there was an extra morphine tablet in the supply.

This was not too unusual in that morphine tablets in some hospitals were signed out in a central location and later distributed to the floor for administration to the patients. The delay of getting through this mechanics of supply sometimes was long enough that, by the time the morphine arrived on the floor for administration, the crisis for which it was being administered had passed. Therefore, the tablet was not used and it was to be returned to Central Supply, and re-recorded.

On this particular day, there was one extra tablet that had not been re-recorded and the cat had sauntered by at a very inopportune time, at least for the cat. We, as two enterprising medical students often will do, immediately jumped to an obvious conclusion. We would test the reported fact that morphine had bizarre effects on cats.

We secured the cat, diluted the morphine with distilled water as indicated, got the cat down and gave it about half of a quarter of morphine tablet intravenously. The cat purred and was friendly and created absolutely no disturbance for five minutes or so, and we then assumed this cat didn't understand the report of some bizarre behavior in cats and some women. We, therefore, administered the balance of the quarter of morphine intravenously.

Apparently, the effect of the two doses augmented each other. The cat took off with the loudest caterwauling scream that I had ever heard. The cat sprang across the laboratory table, shattering urine specimen bottles and blood tubes in all directions, and reached the end of the laboratory room, which, again, was a very high ceilinged room as were all the rooms in this particular facility.

It ran up the curtain on one side, across the valance, down the curtain on the other side, back across the laboratory table, emitting a high-pitched scream throughout this trip. The cat reached the front window, which consisted of a grill that would not permit it to pass under ordinary circumstances, but, some way or another, it managed to wedge itself sidewise and slip under the ledge of the grill—and from there into the main body of the hospital, still screaming an enormous, ear-shattering scream.

As this noise had now taken place for a matter of several minutes, Dr. Mary Spink, whose offices were at the top of the center stairway of the building, started to descend the stairway to see what, for heaven's sake, was progressing.

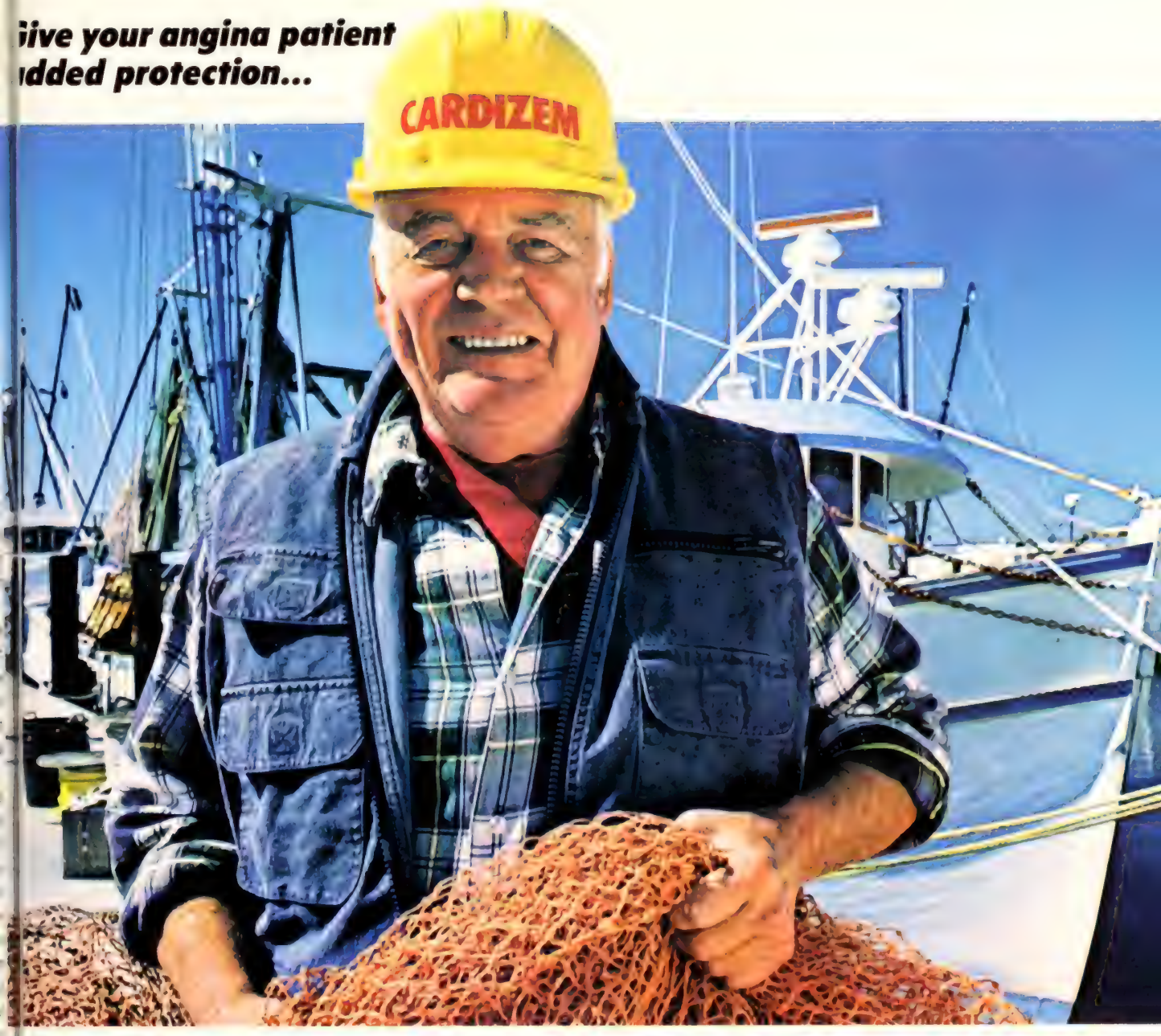
She customarily wore long, voluminous skirts. As the cat raced up the stairway, she raised the front of her skirt as she and the cat were on a collision course. The cat cleared the front of the skirt but when it went between her feet, it got caught in the folds of the skirt on the posterior portion of her dress. This made the cat, of course, attempt to fight its way out. Dr. Spink promptly sat down rather unceremoniously on the stair steps, squashing the cat to a certain degree.

The cat was able to break away from the dress and took off down the hallway in a slightly subdued fashion. Dr. Spink reported to us in the laboratory and wanted to know immediately what had taken place. We, of course, were dumbfounded and had no understanding or knowledge of just why the cat should behave in this bizarre manner and, aside from the suspicions that unfortunately could not be confirmed by Dr. Spink, we were allowed to continue our employment.

For the next several weeks, we were exemplary employees, doing a little extra work in order to reduce suspicion that we might have had anything to do with the cat's bizarre behavior.

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WARNINGS
1. ***Cardiac Conduction.*** *CARDIZEM prolongs AV node refractory periods without significantly prolonging sinus node recovery time, except in patients with sick sinus syndrome. This effect may rarely result in abnormally slow heart rates (particularly in patients with sick sinus syndrome) or second- or third-degree AV block (six of 1,243 patients for 0.48%). Concomitant use of diltiazem with beta-blockers or digitalis may result in additive effects on cardiac conduction. A patient with Prinzmetal's angina developed periods of asystole (2 to 5 seconds) after a single dose of 60 mg of diltiazem*
2. ***Congestive Heart Failure.*** *Although diltiazem has a negative inotropic effect in isolated animal tissue preparations, hemodynamic studies in humans with normal ventricular function have not shown a reduction in cardiac index nor consistent negative effects on contractility (dp/dt). An acute study of oral diltiazem in patients with impaired ventricular function (ejection fraction 24% ± 6%) showed improvement in indices of ventricular function without significant decrease in contractile function (dp/dt). Experience with the use of CARDIZEM alone or in combination with beta-blockers in patients with impaired ventricular function is limited. Caution should be exercised when using the drug in such patients*
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PRECAUTIONS
General. *CARDIZEM (diltiazem hydrochloride) is extensively metabolized by the liver and excreted by the kidneys and in bile. As with any new drug given over prolonged periods, laboratory parameters should be monitored at regular intervals. The drug should be used with caution in patients with impaired renal or hepatic function. In subacute and chronic dog and rat studies designed to produce toxicity, high doses of diltiazem were associated with hepatic damage. In special subacute hepatic studies, oral doses of 125 mg/kg and higher in rats were associated with histological changes in the liver which were reversible when the drug was discontinued. In dogs, doses of 20 mg/kg were also associated with hepatic changes; however, these changes were reversible with continued dosing.*

Drug Interaction. *Pharmacologic studies indicate that there may be additive effects in prolonging AV conduction when using beta-blockers or digitalis concomitantly with CARDIZEM. (See WARNINGS.)*

Controlled and uncontrolled domestic studies suggest that concomitant use of CARDIZEM and beta-blockers or digitalis is usually well tolerated. Available data are not sufficient, however, to predict the effects of concomitant treatment, particularly in patients with left ventricular dysfunction or cardiac conduction abnormalities. In healthy volunteers, diltiazem has been shown to increase serum digoxin levels up to 20%.

Carcinogenesis, Mutagenesis, Impairment of Fertility. *A 24-month study in rats and a 21-month study in mice showed no evidence of carcinogenicity. There was also no mutagenic response in in vitro bacterial tests. No intrinsic effect on fertility was observed in rats.*

Pregnancy. *Category C. Reproduction studies have been conducted in mice, rats, and rabbits. Administration of doses ranging from five to ten times greater (on a mg/kg basis) than the daily recommended therapeutic dose has resulted in embryo and fetal lethality. These doses, in some studies, have been reported to cause skeletal abnormalities. In the perinatal/postnatal studies, there was some reduction in early individual pup weights and survival rates. There was an increased incidence of stillbirths at doses of 20 times the human dose or greater.*

There are no well-controlled studies in pregnant women, therefore, use CARDIZEM in pregnant women only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers. *Diltiazem is excreted in human milk. One report suggests that concentrations in breast milk may approximate serum levels. If use of CARDIZEM is deemed essential, an alternative method of infant feeding should be instituted.*

Pediatric Use. *Safety and effectiveness in children have not been established.*

ADVERSE REACTIONS
Serious adverse reactions have been rare in studies carried out to date, but it should be recognized that patients with impaired ventricular function and cardiac conduction abnormalities have usually been excluded.

In domestic placebo-controlled trials, the incidence of adverse reactions reported during CARDIZEM therapy was not greater than that reported during placebo therapy.

The following represent occurrences observed in clinical studies which can be at least reasonably associated with the pharmacology of calcium influx inhibition. In many cases, the relationship to CARDIZEM has not been established. The most common occurrences as well as their frequency of presentation are: edema (2.4%), headache (2.1%), nausea (1.9%), dizziness (1.5%), rash (1.3%), asthenia (1.2%). In addition, the following events were reported infrequently (less than 1%).

Cardiovascular	*Angina, arrhythmia, AV block (first degree), AV block (second or third degree — see conduction warning), bradycardia, congestive heart failure, flushing, hypotension, palpitations, syncope*
Nervous System	*Amnesia, gait abnormality, hallucinations, insomnia, nervousness, paresthesia, personality change, somnolence, tinnitus, tremor*
Gastrointestinal	*Anorexia, constipation, diarrhea, dysgeusia, dyspepsia, mild elevations of alkaline phosphatase, SGOT, SGPT, and LDH (see hepatic warnings), vomiting, weight increase*
Dermatologic	*Petechiae, pruritus, photosensitivity, urticaria*
Other	*Amblyopia, dyspnea, epistaxis, eye irritation, hyperglycemia, nasal congestion, nocturia, osteoarticular pain, polyuria, sexual difficulties*

The following postmarketing events have been reported infrequently in patients receiving CARDIZEM: alopecia, gingival hyperplasia, erythema multiforme, and leukopenia. However, a definitive cause and effect between these events and CARDIZEM therapy is yet to be established. *Issued 11/85*
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Indiana Consent: A Survey of Practice

DAVID J. POWNER, M.D.
SUSAN M. SMITH, J.D.
BARBARA J. WILDER, M.B.A.
TERESA M. MARKISOHN
Indianapolis

'Neither a Standard of Medical Care nor a Standard of Practice Appears to Exist in Indiana to Guide Physicians and Hospitals in the Area of Which Procedures Require Signed Approval from the Patient'

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INFORMED CONSENT is a process whereby a patient makes a decision to undergo treatment based on his understanding of the nature of the procedure, its benefits, its risks, and its alternatives. Although many aspects of informed consent are discussed broadly within the medical and legal literature, one area which remains unclear is *which* procedures specifically require written approval from the patient.

Hospital policies often use terms such as "invasive" or "operative" as guidelines to indicate when written consent is needed. Such vague terms, however, may produce confusion within physician and nursing staffs and lead to inconsistency in obtaining formal permission from different patients for the same procedure. Incongruity between procedures may also exist whereby a signed consent is obtained for a relatively minor test, (e.g., a lumbar puncture) but not for one more likely to produce side effects (e.g., pulmonary artery catheter insertion). In addition, many diagnostic and therapeutic interventions considered by most physicians to be minor also could logically be deemed "invasive" including peripheral IVs, foley catheters, venipuncture, naso-gastric tubes, etc.

It is generally recognized that physicians must be concerned about obtaining appropriate patient consent before performing certain diagnostic or therapeutic procedures. Such consent maximizes documentation that a discussion of the procedure occurred and minimizes the risk of the legal liability of battery for the physician.

Traditionally, the physician and/or medical staff carries the major burden of the responsibility that informed consent is received from the patient and the hospital facilitates that process by providing appropriate forms. Generally, the hospital is not held liable in situations where consent is not obtained unless it, through one of its employees, is "on notice" that the patient has not given a fully informed consent or is not competent to do so.

For example, the hospital may incur liability when its employee witnesses a patient's signature even though the employee recognizes that the patient has further questions and concerns. At that point, the hospital employee is "on notice" that the patient has not given fully informed consent and the employee has a duty to contact the physician. If a complication results which was not disclosed during the discussion and the patient can prove he or she would not have submitted to the procedure "but for" this disclosure, both the physician and the hospital will incur liability.

In the absence, therefore, of clear medical or legal standards directing which specific procedures require formal written consent and with a certain potential for legal consequences if documentation is not obtained, this survey of hospital practice was done.

Methodology

Copies of current consent policies and procedures were solicited from all of Indiana's 132 JCAH-approved hospitals. Responses were compiled as to whether specific procedures which required signed consent were itemized or if the hospital used a general statement. Those specific procedures were listed and tabulated for comparative purposes.

Results

Policies were received from 65 (49%) of the 132 hospitals. A general consent

TABLE
Medical and Administrative Procedures Requiring Signed Consent
Indiana Survey Data

CONSENT FORM CATEGORY	NO. OF HOSPITALS REQUIRING FORM
Administrative	
Admission Consent	4
AMA	9
Blood Alcohol Drug Testing	6
Blood Refusal	6
Body Bequeathal	4
Chemotherapy	4
Emergency Room Treatment	6
Investigational Drug	6
Living Will	4
Medical Treatment	13
Operation and Anesthesia	8
Operation/Special Diagnostic Procedures	13
Operation/Other Medical Services	12
Operation/Surgical Treatment	24
Photographed	13
Release of Information/Medical Records	14
Refusal of Surgery/Treatment	5
Sexual Assault/Rape Exam/Treatment	9
Tissue Donation	4
Medical:	
Abortion	13
Amputation/Severed Member Disposal	11
Anesthesia	7
Angiogram/Angioplasty/Angiography	9
Arteriographies/Arteriograms	7
Arthroscopies/Arthrograms/Arthrocentesis	7
Autopsy	16
Biopsy	5
Blood Transfusion/Administration	6
Bone Marrow Aspiration/Exam	7
Bronchogram/Bronchoscopies	14
Cardioversion	4
Cataract Extraction/IOL	6
Catheter, Heart	9
Catheter, Subclavian	4
Catheter, Swan-Ganz	4
Chest Tubes	6
Cholangiogram	4
Colonoscopy	8
Cystogram/Cystoscopy	6
Dialysis	4
Electroconvulsive Treatment	4
EST	4
Gastroscopy	6
Hemodialysis	6
Lumbar Puncture	9
Myleograms	14
Pacemaker	4
Paracentesis	10
Sigmoidoscopies	12
Sterilization	29
Thoracentesis	11
Tracheostomy	4
Treadmill Testing	6
Venogram	6

form is used by 37 (57%) of the responding Indiana hospitals while 28 (43%) itemize specific procedures that require signed consent. Those medical and administrative procedures listed by more than three (10%) of the hospitals are presented in the *Table*. In some cases, those hospitals where procedures were itemized also had general statements regarding some issues or treatment delivered in some areas of the hospital.

Discussion

This survey of almost one-half of Indiana's hospitals, and presumably medical staffs, does not show a uniform practice either as to whether itemizing procedures is desirable or as to which procedures should require formal signed consent. A similar variation in practice has been reported among physician radiotherapists[1] and radiologists.[2]

The President's Commission for the Study of Ethical Problems[3] included in its findings a large survey of state statute and clinical practice. That report found only that Texas law[4] stipulates individual procedures which require written consent and that elsewhere local custom prevails. Although many procedures were not included in the Commission's study, virtually all physicians obtained signed permission for inpatient surgery and general anesthesia but most did not for

office surgery or local anesthesia. In addition, about 50% obtained written consent when setting orthopedic fractures or performing radiologic studies which required injections.

Guidelines from the Joint Commission on the Accreditation of Hospitals[5] stipulate that a policy regarding informed consent is required, that it be consistent with any germane legal issues, and that the medical record show that consent has been granted according to the hospital policy.

Finally, opinion from the Judicial Council of the American Medical Association[6] reinforces the need for consent but does not indicate a recommended format for the policy statement.

It appears, therefore, that this issue has not been resolved within the medical literature. If a hospital assumes that it may share with the physician the responsibility to assure that informed consent has been obtained, it would seem prudent for both hospitals and physicians to consider the advantages or disadvantages of both a general or specific consent policy.

A highly structured policy which specifies individual procedures will more likely eliminate those inconsistencies in which: 1) different patients do not sign consents for the same procedure, and 2) procedures with a high risk are performed without written approval while lesser risk procedures are accompanied by a signed consent either from the same or different patient(s). Such a policy might also enhance physician-patient communication by formalizing that contact through a specific consent document, a feature perhaps favored by consumer-oriented patients.

This detailed standard of consent practice is easily monitored through utilization review and quality assurance mechanisms already established in most hospitals. Conversely, a specific consent policy is more costly to maintain if separate forms are used for each procedure. Likewise, if too much reliance is placed upon individual documents, communication between some physicians and their patients may be reduced.

Finally, a hospital should consider whether its own liability is increased by requiring such detailed consent documentation, as such a practice may force the hospital into the higher judicial standard of compliance if it must meet its own more highly specific policy.

A more general policy statement allows the physician more freedom to customize communication with the patient and to discuss those needs, risks, and concerns most appropriate for the patient's condition and personality. This system is less costly to maintain and requires minimal monitoring, as there is less attempt to standardize practice. Electing not to delineate procedures may also reduce hospital liability by allowing implication of a less rigid national standard as the standard of care practice to which the hospital must conform.

Likewise, by placing the hospital in a more passive supportive relationship with the physician, the major responsibility for consent and the associated risk if it is not obtained is shifted more to the physician. Liability for inconsistencies within consent practices throughout the hospital is not an issue, as there is no hospital-defined standard for comparison. Inconsistencies within a physician's own consent practice may create liability for the physician but not the hospital.

Summary

Neither a standard of medical care nor a standard of practice appears to exist in Indiana to guide physicians and hospitals in the area of which procedures require signed approval from the patient. While liability is therefore difficult to assign in the absence of a local or national standard, internal consistency or the avoidance of multiple practices within a single institution may be desirable. Likewise, concern for responsible patient care and potential legal risk should stimulate active discussion among physicians and hospitals to identify a mutually protective internal standard.

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Toward a Tobacco-Free Society

Message from the Executive Director

SMOKING, which has been found more addictive than alcohol or heroin, kills more Americans than any other personal health habit or any other environmental hazard. Nearly 25 percent of deaths attributed to addicting substances are from tobacco.

According to the U.S. Surgeon General, cigarette smoking is "the chief, single, avoidable cause of death in our society . . ."

Such statistics should leave no doubt about the necessity for physicians to take a leadership role in urging people to avoid tobacco. The AMA's goal of establishing a tobacco free society by the year 2000 is a laudable one.

The Indiana State Medical Association is cooperating in that effort as a result of a resolution approved by the 1985 House of Delegates.

ISMA's plan is both a legislative and a public awareness campaign that will draw on other interested groups. Early this summer, representatives from ISMA met to form a coalition with representatives of the American Cancer Society, the Indiana Heart Association, the American Lung Association of Central Indiana, the Indiana State Board of Health, the Indiana Academy of Family Practice Physicians, the Indiana Association of Osteopathic Physicians, the Indiana Dental Association, the Marion County Health and Hospital Corporation, the Indianapolis Heart Institute, the Indiana Public Health Association and the Indiana State Nurses Association.

Many of these groups have had active anti-smoking programs for some time and their representatives expressed their appreciation that ISMA was taking a stand on this important health issue. They have pledged their support for our efforts to get several legislative measures introduced in the next session of the Indiana General Assembly.



RICHARD R. KING
Executive Director
Indiana State Medical Assn.

This Indiana Coalition for a Tobacco Free Society by the year 2000 has developed a list of legislative issues relating to tobacco. Among them will be a measure to increase the excise tax on cigarettes and a move to ban smoking and the use of tobacco products in hospitals and other public health facilities. Two other possibilities for legislation include seeking a law to restrict the placement of vending machines and a law that would prohibit placing billboard advertisements for cigarettes and smokeless tobacco near schools.

The second thrust of the effort is a public awareness campaign to complement the legislative initiatives.

Much of this part of the campaign will be targeted toward school children, specifically 3rd and 4th graders, who, studies show, already are using smokeless tobacco.

ISMA will encourage member physicians to participate in the coalition's efforts by offering to visit their local school to talk about the dangers of tobacco.

Other segments of the public awareness campaign will include a four-part newspaper series for the ISMA's "Your Hoosier Doctor Says" column, now carried in more than 60 newspapers statewide. Additionally, radio news actualities and public service announcements will be provided to radio stations in the state. Another effort will include appearances by Coalition members on radio and television public affairs programs.

These activities will be kicked off in conjunction with ISMA's Annual Meeting Oct. 30-Nov. 2 and with the American Cancer Society's Great American Smoke out.

Smoking will be the primary reason for the deaths of close to half a million people in this country this year, and next year, and every year in which as many people continue to smoke as do now. ISMA is taking a big step by promoting the creation of the The Indiana Coalition for a Tobacco Free Society. The Coalition has an important job to do. It will need the support of all ISMA members to carry out its goals.



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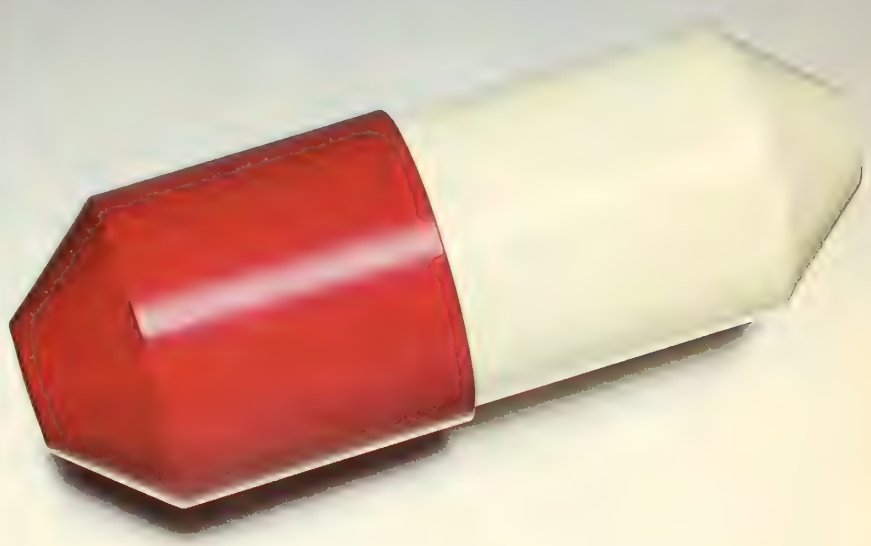
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B re prescribing, see complete prescribing information in SK&F CO. l ature or *PDR*. The following is a brief summary

ARNING

is drug is not indicated for initial therapy of edema or hypertenn. Edema or hypertension requires therapy titrated to the individual this combination represents the dosage so determined, its use y be more convenient in patient management. Treatment of hyperision and edema is not static, but must be reevaluated as conions in each patient warrant

raindications: Concomitant use with other potassium-sparing agents as spironolactone or amiloride. Further use in anuria, progressive or hepatic dysfunction, hyperkalemia. Pre-existing elevated serum sium. Hypersensitivity to either component or other sulfonamide-ed drugs.

Warnings: Do not use potassium supplements, dietary or otherwise, s hypokalemia develops or dietary intake of potassium is markedly ired. If supplementary potassium is needed, potassium tablets ld not be used. Hyperkalemia can occur, and has been associated cardiac irregularities. It is more likely in the severely ill, with urine ne less than one liter/day, the elderly and diabetics with suspected nfirmed renal insufficiency. Periodically, serum K^+ levels should be mined. If hyperkalemia develops, substitute a thiazide alone, restrict ntake. **Associated widened QRS complex or arrhythmia requires pt additional therapy.** Thiazides cross the placental barrier and ar in cord blood. Use in pregnancy requires weighing anticipated fits against possible hazards, including fetal or neonatal jaundice, bocytopenia, other adverse reactions seen in adults. Thiazides ar and triamterene may appear in breast milk. If their use is essential atient should stop nursing. Adequate information on use in children t available. Sensitivity reactions may occur in patients with or with a history of allergy or bronchial asthma. Possible exacerbation or ation of systemic lupus erythematosus has been reported with ide diuretics.

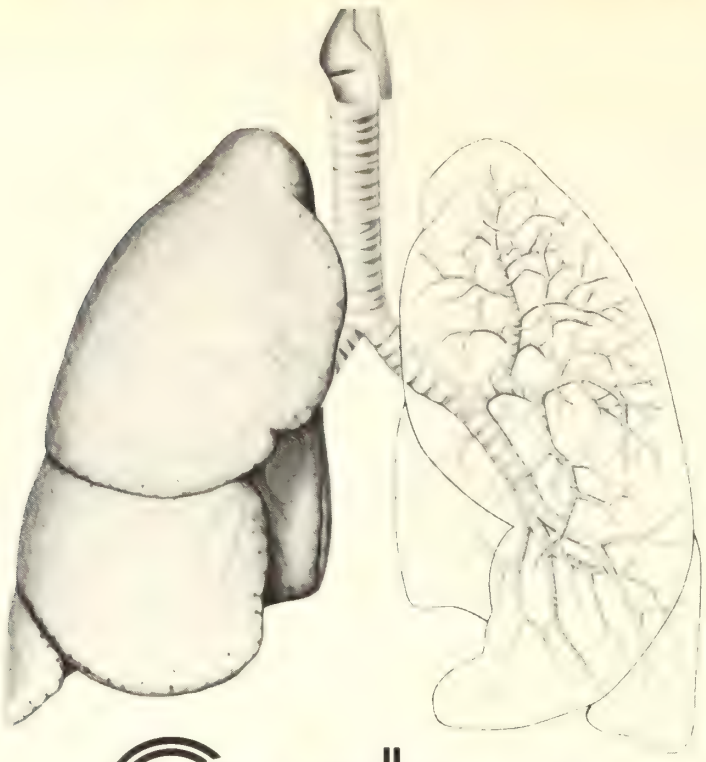
autions: The bioavailability of the hydrochlorothiazide component of zide' is about 50% of the bioavailability of the single entity retically, a patient transferred from the single entities of triamterene ydrochlorothiazide may show an increase in blood pressure or fluid ition. Similarly, it is also possible that the lesser hydrochlorothiazide ailability could lead to increased serum potassium levels. However, sive clinical experience with 'Dyazide' suggests that these conditions not been commonly observed in clinical practice. Angiotensinerting enzyme (ACE) inhibitors can elevate serum potassium; use caution with 'Dyazide'. Do periodic serum electrolyte determinations icularly important in patients vomiting excessively or receiving enteral fluids, and during concurrent use with amphotericin B or costeroids or corticotropin [ACTH]). Periodic BUN and serum inine determinations should be made, especially in the elderly, etics or those with suspected or confirmed renal insufficiency. ulative effects of the drug may develop in patients with impaired renal ion. Thiazides should be used with caution in patients with impaired etic function. They can precipitate coma in patients with severe liver ase. Observe regularly for possible blood dyscrasias, liver damage, or idiosyncratic reactions. Blood dyscrasias have been reported in ents receiving triamterene, and leukopenia, thrombocytopenia, ulocytosis, and aplastic and hemolytic anemia have been reported thiazides. Thiazides may cause manifestation of latent diabetes tus. The effects of oral anticoagulants may be decreased when concurrently with hydrochlorothiazide; dosage adjustments may be essary. Clinically insignificant reductions in arterial responsiveness repinephrine have been reported. Thiazides have also been shown to ase the paralyzing effect of nondepolarizing muscle relaxants such bocurarine. Triamterene is a weak folic acid antagonist. Do periodic l studies in cirrhotics with splenomegaly. Antihypertensive effects be enhanced in post-sympathectomy patients. Use cautiously in cal patients. Triamterene has been found in renal stones in associa- with the other usual calculus components. Therefore, 'Dyazide' ld be used with caution in patients with histories of stone formation. w occurrences of acute renal failure have been reported in patients 'Dyazide' when treated with indomethacin. Therefore, caution is sed in administering nonsteroidal anti-inflammatory agents with zide'. The following may occur: transient elevated BUN or creatinine ith, hyperglycemia and glycosuria (diabetic insulin requirements may tered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), easing alkali reserve with possible metabolic acidosis. 'Dyazide' feres with fluorescent measurement of quinidine. Hypokalemia is mmon with 'Dyazide', but should it develop, corrective measures ld be taken such as potassium supplementation or increased dietary e of potassium-rich foods. Corrective measures should be instituted iously and serum potassium levels determined. Discontinue correcmeasures and 'Dyazide' should laboratory values reveal elevated m potassium. Chloride deficit may occur as well as dilutional natremia. Concurrent use with chlorpropamide may increase the risk evere hyponatremia. Serum PBI levels may decrease without signs hyroid disturbance. Calcium excretion is decreased by thiazides. Dzide' should be withdrawn before conducting tests for parathyroid tion. Thiazides may add to or potentiate the action of other antirtensive drugs. Diuretics reduce renal clearance of lithium and ase the risk of lithium toxicity.

Adverse Reactions: Muscle cramps, weakness, dizziness, headache, mouth; anaphylaxis, rash, urticaria, photosensitivity, purpura, other matological conditions; nausea and vomiting, diarrhea, constipation, er gastrointestinal disturbances; postural hypotension (may be avated by alcohol, barbiturates, or narcotics). Necrotizing vasculitis, sthesias, icterus, pancreatitis, xanthopsia and respiratory distress ding pneumonitis and pulmonary edema, transient blurred vision, adenitis, and vertigo have occurred with thiazides alone. Triamterene been found in renal stones in association with other usual calculus ponents. Rare incidents of acute interstitial nephritis have been rted. Impotence has been reported in a few patients on 'Dyazide', ough a causal relationship has not been established.

Supplied: 'Dyazide' is supplied as a red and white capsule, in bottles of 100 capsules; Single Unit Packages (unit-dose) of 100 (intended for institutional use only); in Patient-Pak™ unit-of-use bottles of 100.

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Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

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Administer cautiously to allergic patients

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics. It must be considered in differential diagnosis of antibiotic-associated diarrhea. Colon flora is altered by broad-spectrum antibiotic treatment, possibly resulting in antibiotic-associated colitis

Precautions:

- Discontinue Ceclor in the event of allergic reactions to it
- Prolonged use may result in overgrowth of nonsusceptible organisms.
- Positive direct Coombs' tests have been reported during treatment with cephalosporins.
- In renal impairment, safe dosage of Ceclor may be lower than that usually recommended. Ceclor should be administered with caution in such patients.
- Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis
- Safety and effectiveness have not been determined in pregnancy, lactation, and infants less than one month old. Ceclor penetrates mother's milk. Exercise caution in prescribing for these patients.

Adverse Reactions: (percentage of patients)

Therapy-related adverse reactions are uncommon. Those reported include:

- Gastrointestinal (mostly diarrhea): 2.5%.
- Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment.
- Hypersensitivity reactions (including morbilliform eruptions, pruritus, urticaria, erythema multiforme, serum-sickness-like reactions): 1.5%; usually subside within a few days after cessation of therapy. These reactions have been reported more frequently in children than in adults and have usually occurred during or following a second course of therapy with Ceclor. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome
- Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy
- Other: eosinophilia, 2%; genital pruritus or vaginitis, less than 1%

Abnormalities in laboratory results of uncertain etiology

- Slight elevations in hepatic enzymes.
- Transient fluctuations in leukocyte count (especially in infants and children)
- Abnormal urinalysis; elevations in BUN or serum creatinine
- Positive direct Coombs' test
- False-positive tests for urinary glucose with Benedict's or Fehling's solution and Clinitest® tablets but not with Tes-Tape® (glucose enzymatic test strip, Lilly)

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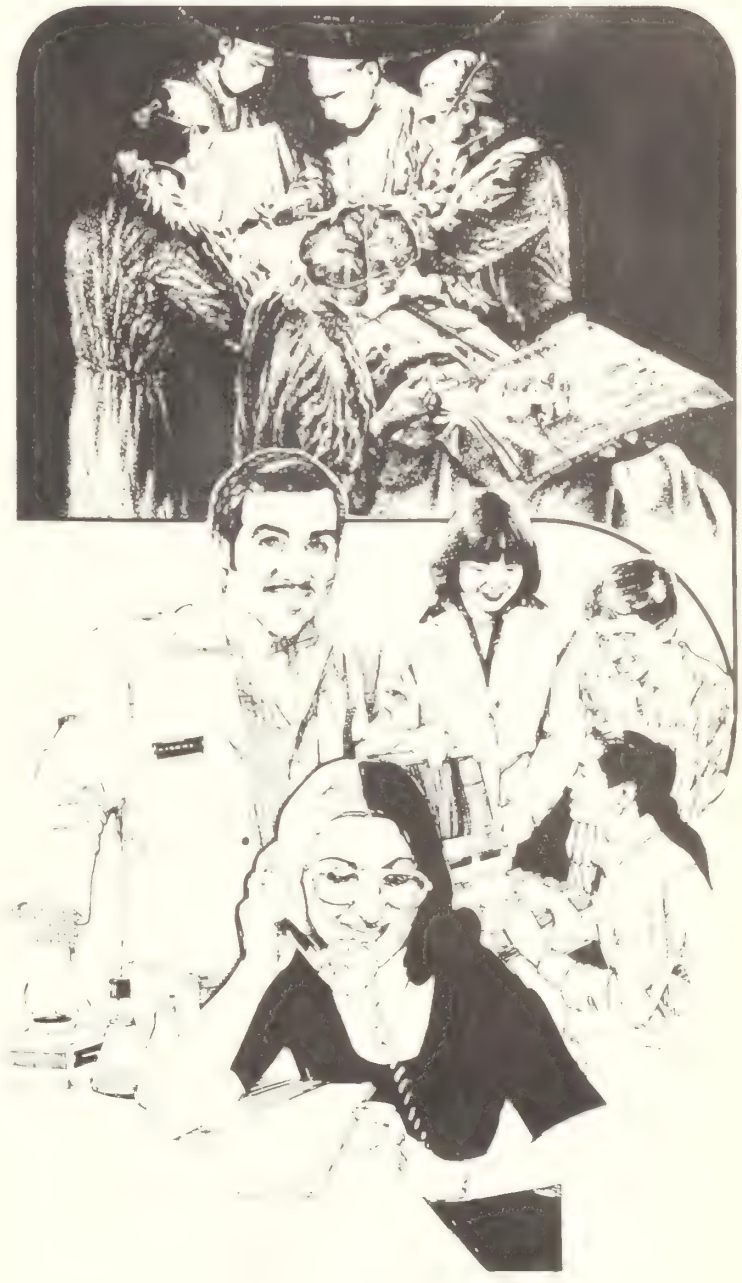
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Serving Indiana's Growing Medical Community

The Indiana Peer Review Organization

A Look at the Sensitive and Difficult Mission of IPRO

PAUL F. MULLER, M.D.
IPRO Medical Director

THE INDIANA PEER REVIEW Organization (IPRO) has renewed its two-year contract with the Health Care Finance Agency (HCFA) to perform the peer review function of Medicare admissions to 137 hospitals in the state. The previous contract expired July 31.

In passing the Tax Equity and Fiscal Responsibility Act (TEFRA), and the 1982 and 1983 Amendments to the Social Security Act, Congress realized that something had to be done to arrest the rapid escalation of the cost of Medicare. When the legislation providing for governmental support of health care for the elderly was passed in 1965, it was estimated that the cost would be $1 billion a year. In 1967, that cost was $3 billion; in 1984, it was $60 billion. Therefore, the prospective payment system (DRGs) and the establishment of a PRO in each state was legislated, signed by the President, and federal regulations were written by DHHS in 1983.

Through the DRGs, the incentive for, and the burden of, reducing the length of stay was placed upon the hospitals. The PROs were asked to review hospital admissions for necessity and were asked to reduce them by a certain percentage in the first year. This was to be accomplished first by denying those admissions in which the services rendered could have been performed on an outpatient basis, and secondly by denying so-called "social admissions."

"Social admissions" are those for which the medical condition would not require admission, but in which the convenience of the patient, the distance from the hospital, the number of outpatient visits required, the unavailability of relatives or others to provide custodial care, etc., occasion the admission. The government felt that certain inconveniences would be imposed by denying social admissions but that the quality of medical care would not be impaired.

Both of the above requirements initially placed a severe burden on the smaller hospitals that were not prepared to render such outpatient services and were positioned in communities that had looked upon the hospital as a social problem-solving resource. The 1965 legislation did not approve social admissions for payment, but that portion of the law had never been enforced until the PROs came into existence; then the HCFA told them the government would no longer pay for such admissions. In my opinion, this abrupt change should not have taken place without legislation to provide more support for a variety of intermediate level of care institutions and services. The accompanying graph shows the initial negative impact of this abrupt change on the smaller hospitals.

After about six months they adapted to the new situation, established holding rooms, provided more outpatient services and provided educational material for their patients and admitting physicians. In the past year denials have been equally distributed among the hospitals as grouped by their size.

IPRO has utilized a system whereby the reviewing nurses in the hospitals have generic (in most cases not disease specific) criteria which permit them to approve admission. If one admission criterion plus one level of service criterion is found, the chart is approved and that is the end of the review. If the review nurse does not find the criteria, she does not deny the admission but refers it to a physician reviewer who is *not* bound by criteria. He is to use his medical judgment based upon years of experience in admitting patients to hospitals. If he feels the chart does not provide enough information, we write the admitting physician requesting additional information. Unfortunately, initially we had severe time restrictions and had to ask for an answer within seven days. This included mailing time both ways, week-ends, vacations, and busy schedules which made this almost impossible. When no reply was received, the chart was denied. By protesting to HCFA and with the help of some Indiana Congressmen, we had the reporting time doubled and can now give the physician 15 days to reply. This has been very helpful as previously some 50% of the denials were made because we did not receive a reply from the admitting physician. When we did receive a reply we were able to grant an approval in well over half the cases.

Unfortunately, the law passed by Congress requires that the final denial letter be sent to the physician, hospital and patient. This has caused much con-

Correspondence: Indiana Peer Review Organization, 11550 N. Meridian St., Tower One, Carmel, Ind. 46032.

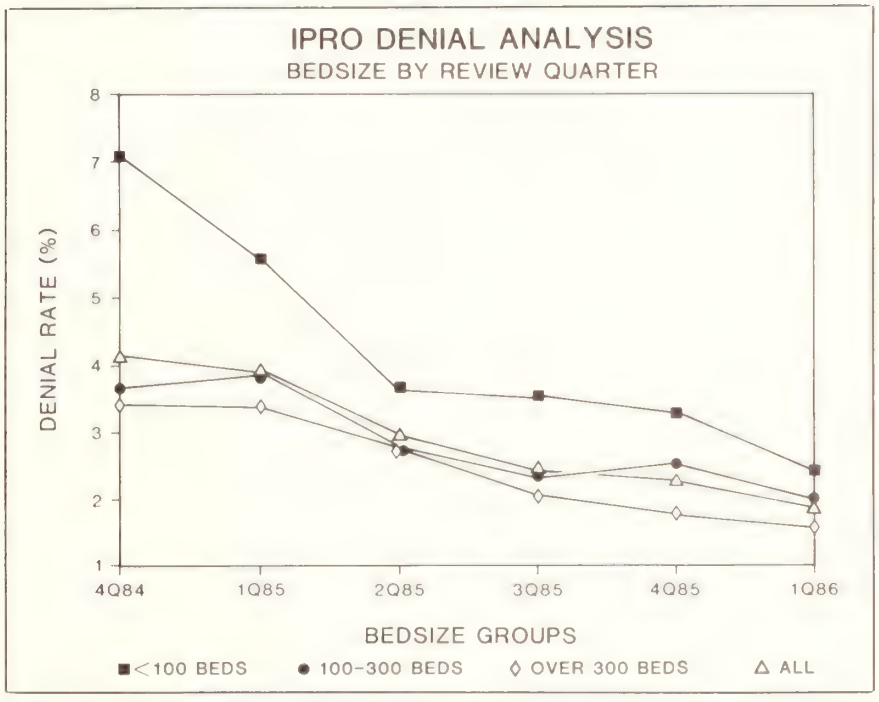
cern on the part of the patient and in some cases disturbed long-standing excellent relationships between patient and doctor. IPRO has protested against this portion of the law but it seems that there have been strong lobbying efforts on the part of consumer groups which cannot be ignored.

The final denial letter tells the physician, the hospital and the patient that they have 60 days to ask for a reconsideration. The reconsideration hearing is conducted by physicians who have not previously passed judgment on the admission. The patient, the hospital and/or the physician have a right to attend the hearing.

Not every denied admission resulted in loss of payment to the hospital and physician. A waiver of liability system was in effect which permitted payment if the hospital in any quarter of the year had retained its waiver. I will not go into the details of the waiver of liability system because with Gramm-Rudman restrictions on the horizion it has been eliminated. For services rendered after March 24, 1986, payment will be denied for every admission denied. It is estimated that HCFA will save $400 million per year because of this change. It should be unnecessary to say that individual hospitals may lose as much as $20,000 to $70,000 per year depending on their size, sophistication of services and the admitting patterns of their physicians.

IPRO is also required to do DRG validation. This means that charts are reviewed to determine if the Principal Diagnosis attested to by the admitting physician is supported by documentation in the chart. HCFA has required this in order to insure the validity and uniformity of national data used for study and decision-making and also to insure that the proper payment is made to the provider.

There has been some confusion because of the definition of the Principal Diagnosis. It is defined as that diagnosis which after study is determined to have precipitated the admission. Data from the admission can be used in making the determination. The Principal Diagnosis is not necessarily the major diagnosis nor the diagnosis which poses the greatest threat to the well being of the patient. Conditions developing after admission cannot be designated as the Principal Diagnosis. Many physicians have not understood the above and have objected to changing the Principal Diagnosis. It has been said that the DRGs do not make "medical sense" but that they should make "fiscal sense." As physicians it is hard for us to understand.



With the new contract all PROs have been told to devote more attention to quality review, and generic quality screening criteria have been developed by HCFA for their use in the hospitals. As in admission review, nurses will not make denials. If the screening criteria indicate, the nurse refers the case to a physician to review. Here again, he is not bound by criteria but is to utilize his long years of experience in making a medical judgment.

If the physician, in making his judgmental decision, feels that the care was substandard, he refers the case to a specialist in that specific category for review. If the specialist agrees that there was a quality of care violation, the attending physician receives a letter asking for additional information and stating that a quality denial is pending. When the physician responds, the case with his explanation is reviewed by a Quality Assurance committee of physicians from his region of the state. They will determine if a Quality denial should be made and also if the violation is "gross and flagrant."

If the violation is considered "gross and flagrant" immediate sanction activity is indicated. If not "gross and flagrant" the denial is logged and is referred to the QA Committee for initiation of the sanction process only after repeated offenses despite educational attempts at correction. If no reply is received from the attending physician, a final letter must be sent to the physician, the hospital and the patient just as in the case of utilization denials. There has been much discussion in Congress regarding the letter to the patient about a quality denial. It will be like waving a red flag for a

malpractice suit response. The consumer groups have made strong arguments for such a requirement and the Congress has been convinced that the patient should be notified. The PROs of the country and their national federation, "American Medical Peer Review Organization," and the AMA have lobbied against it, but the forces on the other side have been too strong.

Attempts will be made to so write the letter that malpractice suits will hopefully not ensue.

It should be apparent that in the second two years of contracts the PROs have been given a completely new mission. It will be a much more sensitive and difficult mission. Remember that the IPRO Board is composed of physicians—physicians who are involved in peer review because they feel the admitting physicians should be given every opportunity to respond when questions arise and that review decisions should be made objectively by physicians with long experience in the treatment of Medicare patients. If physicians do not participate in the PRO movement, review may well be controlled by non-physicians.

IPRO Outlines New Review Requirements

The Indiana Peer Review Organization (IPRO) has announced that, beginning August 1, it will conduct hospital pre-admission reviews of all cases involving the following procedures when they are to be performed on an *elective* basis:

04.43—Release of Carpal Tunnel
33.23—Other Bronchoscopy
45.13—Other Endoscopy of Small Intestine
57.32—Other Cystoscopy
69.09—Other Dilation and Curettage
85.12—Other Breast Biopsy

In addition, the IPRO will review, either prior to hospital admission or before actual performance of the procedure, every *elective* case proposed for *Permanent Cardiac Pacemaker* implantation and reimplantation procedures, including the insertion of generator packs, electrodes or leads.

Elective cases will be reviewed either "pre-admission" or "pre-procedure" as specified to determine the medical necessity and appropriateness of the admission and procedure. Emergency and urgent admissions are not subject to such review.

The procedures listed above were selected by frequency of performance and because the majority (except for pacemaker implants) can most often be performed effectively and safely in an ambulatory setting or on an outpatient basis.

Although some of the case types subject to pre-admission review have changed, IPRO's procedure for obtaining pre-admission certification remains the same. To obtain pre-admission review, the attending physician or representative should call the IPRO toll free number, 800-421-6558 or 6557; the local number is 844-4733. The information needed includes the patient's name, address, Medicare number, sex, birth date, hospital, date of admission, primary admitting diagnosis, medical reason(s) for hospitalization, and the physician's plan of treatment.

EDITORIALS

RMS Essay Winners Announced

The first Resident Medical Society of ISMA-INDIANA MEDICINE Resident Physician Essay Contest, conducted in the academic year 1985-86, has been judged and the prizes have been awarded. The first prize of $200 and a Certificate goes to Mark A. Hochstetler, M.D., a Graduate Fellow (PGY-4) in Family Practice at St. Francis Hospital Center in Beech Grove for his essay, "A Survey of Filing Systems for the Medical Literature."

The second prize of $100 and a Certificate is awarded to Silvio A. Garcia, M.D., Department of Radiation Oncology, Indiana University Medical Center, Indianapolis for an essay, "Recent Trends in Pediatric Osteogenic Sarcoma."

The third prize of $100 and a Certificate goes to Mark W. Bradley, M.D. of the Department of Medical Education, Methodist Hospital, Indianapolis for his essay entitled, "Breast Feeding and Necrotizing Enterocolitis."

Each of these prize essays will be published in INDIANA MEDICINE. Dr. Hochstetler's essay appears in this issue beginning on page 690.

Lipid Experts Meet to Discuss Speakers' Program

Sixty U.S. and Canadian lipid specialists recently met in Washington, D.C. to organize a speakers' program dealing with cholesterol education.

The group will provide speakers on "Cholesterol and Coronary Disease . . . Reducing the Risk," an education program being underwritten by a grant from Mead Johnson Laboratories, Evansville, Ind.

Enrollment in the program remains open and doctors are encouraged to call (212) 826-3300 for information about registration, which is free of charge.

Information on the speakers' program, including procedures for requesting speakers, will be provided to appropriate institutions by Mead Johnson sales representatives.

Correct Use of Child Car Seats on the Rise

More children are being protected by proper automobile restraints than ever before.

A survey, sponsored by the Indiana Division of Traffic Safety, and conducted for the third year by the Automotive Safety for Children Program of Riley Hospital, showed that the incorrect use of car seats had decreased by 20%, from 77% in 1984 to 57% in 1985.

Fatalities and injuries to children while traveling in autos dropped from 19.5% before the law to 13.5% in 1984-85 under the influence of the seatbelt law.

Keratotomy Advice

"What Patients Should Know About Radial Keratotomy" is the title of an article by senior author Maureen K. Lundergan, M.D., in the May issue of *American Family Physician* magazine. Physicians who counsel their patients on this subject may wish to read the article.

The theme of the article is that, while keratotomy is of great advantage to myopic patients, they should be aware of risks of the anesthesia, infections and surgical errors inherent to the procedure.

Surrogate Screening for non-A, non-B Hepatitis

Letter to the Editor

The American Red Cross and the American Association of Blood Banks recently took measures designed to significantly reduce the incidence of post-transfusion non-A, non-B hepatitis.

As you may know, this form of viral hepatitis is the most frequent, serious complication associated with transfusion in the United States. Unlike hepatitis B and AIDS, the organism responsible for causing non-A, non-B is unknown, so it is not possible to screen donor blood for direct evidence of the disease.

However, new medical research conducted by the National Institutes of Health provides some good news for transfusion recipients. Their study, published in the April issue of *Annals of Internal Medicine*, reports that two simple and inexpensive tests can be used in combination as a surrogate screen for non-A, non-B. It concludes that surrogate testing could prevent up to 40% of transfusion-associated non-A, non-B hepatitis.—**Charles P. Weber, Media Relations, Abbott Laboratories**

NOTE: Background information may be requested from Mr. Weber. Write Abbott Laboratories, Abbott Park, Ill. 60064, or call (312) 937-2654.

Penetrate or Perforate?

Commentary

Several years ago an ophthalmologist corrected my misuse of the words "penetrate" and "perforate." "Penetrate," he said, "means that the foreign body has entered the eyeball, but has not exited out the other side." But "perforate" meant that the foreign body had entered the eyeball and passed out of it. It had made a complete track through the eyeball.

I looked up the definition of these two words in a medical and several other dictionaries. The ophthalmologist was right. "Penetrate" means "to pierce," "enter" or "pass into." "Perforate" means to "to pierce through," "bore through," or "pass through." "Through" is, of course, the main meaning of the Latin word, "per."

These concepts apply to other organs and structures in the body also.

Sometimes, when I have to clarify it to myself or someone else, I say "perforate" creates a "hole through" or a "window"; so for a split second a "foramen" is created, in theory. Of course, tissue quickly moves in to close it. This may be a little unscientific, but it helps me remember. So I pass it on to you for whatever it may be worth.—**Richard J. Noveroske, M.D., Newburgh**



AUXILIARY REPORT

Alfrieda Mackel (Mrs. Frederick)
ISMA Auxiliary President 1986-87

The ISMA Auxiliary needs the assistance of the physicians in ISMA to help motivate the auxiliary in each county. If there is no organized auxiliary in your county, your support and encouragement could lead to organizing one. An active auxiliary could be an extension of your right arm to meet health needs of your community. Informed spouses can be valuable public relations persons for you and your medical practice. Working together, medical spouses can effectively communicate your views to legislators when you may not have time.

The following counties do not have auxiliaries affiliated with the ISMA Auxiliary: ADAMS, BENTON, CLAY, CLINTON, CRAWFORD, DAVIESS, DEARBORN, DECATUR, DE KALB, FOUNTAIN, FULTON, GIBSON, GREENE, HANCOCK, HAMILTON, HARRISON, HUNTINGTON, JASPER, JEFFERSON, KOSCIUSKO, MADISON, MARTIN, MIAMI, MORGAN, NEWTON, OHIO, ORANGE, PARKE, PERRY, PIKE, PULASKI, RANDOLPH, RIPLEY, SCOTT, SPENCER, STEUBEN, SULLIVAN, SWITZERLAND, TIPTON, VERMILLION, WARREN, WASHINGTON, WHITE, WARRICK and WHITLEY.



The ISMA-A Program Planning Session on May 22 found Sylvia Scheeringa, Anne Throop and Joann Wehlage sharing ideas over coffee. The meeting was held in the home of Marianna Irwin in Indianapolis.

Should you support the formation of an auxiliary, contact the ISMA Office and Rosanna Iler will put you in contact with the officers to help. Also *encourage your spouse* to come to the Leadership Conference mentioned in the prescription below.

Rx for the Physician

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For Your Spouse

Address Your Town, Indiana Date September 11, 1986

One active auxiliary membership

Sig:
Attend the ISMA Auxiliary Leadership Conference
to promote understanding to be partners in health

[illegible], President

Dispense as written May substitute

Refill PRN to rejuvenate spouse

The tentative agenda for the workshop includes a membership development session. Richard R. King will be introduced as the new ISMA executive director. ISMA legislative assistants Greg Bowes and Julie Newland will tell what they expect to see happening in the Indiana Legislature. Public service announcements concerning health problems and a series of educational programs for senior citizens entitled "Healthy, Happy and Wise" will be previewed. Medi-file cards for our mobile population will be available.

Your spouse will spend the day with enthusiastic, sincere, dedicated auxilians. Mutual support and understanding are vital to the well being of medical families today. Please help.— **Lura Stone, Northern Area Vice President, Ligonier**

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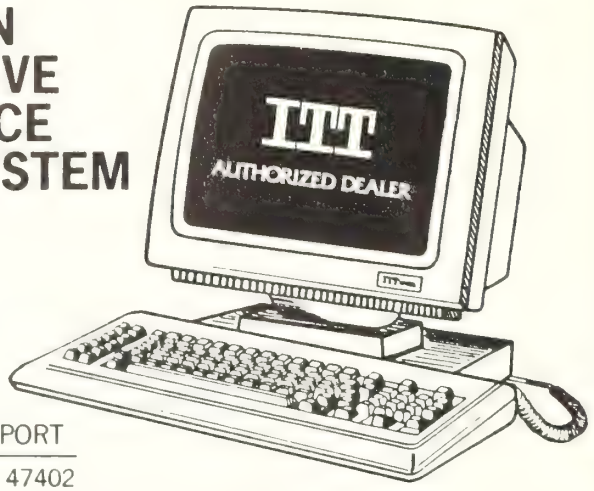
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BOOK REVIEWS

Urologic Endoscopy: A Manual and Atlas

By D.H. Bagley, M.D., J.L. Huffman, M.D., and E.S. Lyon, M.D. Copyright 1985, Little, Brown and Company, Boston and Toronto.

Although my interest in this book was originally to learn the techniques and application of ureteral endoscopy (and percutaneous pyeloscopy, to a lesser extent), it is always rewarding to study a subject from beginning to end. It crystallizes the facts and concentrates the mind.

This particular book, called a manual and an atlas, seems a slick and really "high classed" production (at $97.66 per copy it should be, I guess). It consists of a quarto-sized volume with copious illustrations, color photographs of endourologic organs and diseases, and a readable text. The three authors are from diverse American institutions—Bagley from Jeffersion in Philadelphia, Huffman from New York and Edward Lyon is of the University of Chicago. These are augmented particularly by pediatric urologist Lawrence Kroovand.

The 22 chapters cover seemingly everything you ever wanted to know about urologic endoscopy from the routine normal bladder through all endoscopic treatments (litholapaxy, transurethral resections and all). At the end of each chapter a small bibliography gives trenchant references for further study.

Any student of modern urology needs a book such as this one in spite of the pricey aspect.—**Rodney A. Mannion, M.D., LaPorte**

Colonic Neoplasms

By Hans Elias. Published 1985 by Ishiyaku EuroAmerica, Inc., 11559 Rock Island Court, Maryland Hts., St. Louis, Mo. 63043. 184 pages, 169 illustrations, hardcover, $30.

This timely monograph of colonic neoplasms is beautifully written and illustrated. The author notes in the preface that the monograph is based on observations of surgical biopsy and autopsy specimens and does not deal with experimental work. In the first four chapters Dr. Elias reviews the history of microscopic oncology, discusses the unicentric theory of the origin of colonic carcinoma, and also the histology of the normal colonic mucosa. He then devotes chapters four, five and six to colorectal polyps, the origin of colonic neoplasms, and the structure of colonic carcinoma. He then, in a logical progression, describes cell multiplication, metastasis, and the resistance of adenocarcinoma to the host's defense system. The following two chapters deal with colonic neoplasms and recruitment. Chapter twelve is devoted to chromosomes and their possible relationship to colonic carcinoma.

This 184-page outstanding monograph is probably the most complete and accurate description available on this particular subject and should be in the libraries of all professional persons dealing with colonic cancer. The author provides very logical explanations for the multicentric origin of colon cancer, and also has an excellent discussion in the chapter on recruitment, pointing out that the metastatic cells of the involved organ gradually do undergo malignant transformation. Approximately 50% of the material is photomicrographic, illustrating the points brought out in the text. All physicians and others interested in this vicious illness will certainly have a better understanding of the developmental processes after reviewing this carefully written monograph. It is highly recommended.—**I.E. Michael, M.D., Indianapolis**

The American Health Consultants, Inc., an Atlanta based health care publishing firm, has released *Practical Aspects of Drug Utilization Review: A Multidisciplinary Approach.* Packed with 270 pages of expert advice and strategies from 15 of the country's leading drug utilization professionals who lectured at the Drug Utilization Review '85 National Conference. $79.

Every Girl

By Helen Doan, Ph.D., and Janice Morse, R.N., Ph.D. Copyright 1985, Stoddard Publishing Co., Ltd., Toronto. 84 pages, softcover, $7.95.

Every Girl is a 75-page booklet subtitled *Learning About Menstruation.* I recommend it highly. Its tasteful and attractive cover, its large type and outline form, its candid message and its simple wording leave it fact-filled and easy to read.

The authors, both Toronto Canadians, tell some of their story with quotes of the questions and worries about menstruation expressed by 7th and 8th grade girls. I borrowed their format and asked for mini-reviews for the booklet from several Terre Haute girls and women. Some of their comments: ". . . Well written." ". . . Illustrations are very good and up to date." ". . . Easy to read and understand." ". . . Very informative . . . answers many questions young girls often ask." . . . . . This reviewer agrees.

Only minor problems were encountered in the text. A discussion of the average age of menarche gives ambiguous conclusions. An illustration of pelvic organs includes a rectum with a closed proximal pouch. Vitamins and minerals are tabulated as useful in various menstrual complaints, lending more credence to their value than the accompanying text allows. Some definitions in the glossary could be improved, such as: bacteria, ovum-ova, reproductive system.

It would behoove physicians who counsel adolescents—whether at the office or at home—to have on hand several copies of *Every Girl.*—**Thomas J. Conway, M.D., Terre Haute**

Raven Press has a new book designed to inform the public about inflammatory bowel disease. Written by Drs. Steven B. Hanauer and Joseph B. Kirsner, it provides introductory information allowing patients and their families to better understand the scope of these illnesses. Its title is: *Inflammatory Bowel Disease . . . A Guide for Patients and Their Families.*

The Surgeon's Turn

By George H. Rawls, M.D., Indianapolis. Copyright 1986, Vantage Press, New York.

This is an enormous little book. The content of its fifty-eight pages is greater than one expects in much larger volumes and is a testimony to the economy of words and concise literary style of the author. It is a day by day, and sometimes minute by minute, account of a surgeon's experience as he discovers his own thyroid nodule and proceeds through his diagnostic work-up, surgical and medical treatment and recovery, but it is much more than that.

It is a complete character study of a man and his family. Born black in the Deep South at a time when civil rights had been on the back burner since the days of reconstruction, the author was able to overcome overwhelming odds largely because of three very important things he learned at his mother's knee. 1) a strong sence of self worth, 2) a contempt for mediocrity of effort, and 3) a deep and abiding religious faith. The first two of these enabled him to develop his natural talent and intellect to become sequentially an honor student, a biological scientist and a consummate surgeon. The third gave him the quality which Sir William Osler listed as the fourth, and perhaps most important essential quality of a physician—the grace of humility. Thus he matured with a well-justified self confidence which enabled him to "take charge," but always mindful of sensitivities of others, be they family members, patients, friends or associates. It was characteristic that when he became aware that he might have a life-threatening condition his first concern was for the members of his family who had become accustomed to his previous invulnerability.

The most consistent element that comes through in each of the book's seven chapters is that of love—love of the family members for each other, love of God in whom they place their complete trust, and love of humanity exemplified by their concern for people and their deep appreciation for all their gifts of life, especially the kind nesses rendered to them by others.

The nature of the story requires that some technical language be used, but is used logically and sparingly so that the content is understandable to persons not familiar with medical jargon. The subjective feelings of anxiety and pain and the inconvenience of difficulty with what are ordinarily taken-for granted bodily functions, are well-described. There is a liberal sprinkling of the author's thoughts about the socioeconomic aspects of medical practice which are well-founded, considering his experience as the Treasurer and member of the Executive Committee of the Indiana State Medical Association.

The book is highly recommended reading for all those who may at some time be surgical patients, and, in my view, it might well be required reading for all those who would be responsible for their care—**John D. MacDougall, M.D., Beech Grove**

Editor's Note: *The Surgeon's Turn* can be ordered by sending $7.95 plus $1.25 for shipping and handling to: Vantage Press, Inc., 516 W. 34th Street, New York, N.Y. 10001.

Visa and Mastercard are acceptable if the card number and date of expiration are given.

Dr. Rawls has dedicated all proceeds from sales of the book to the Marion County Chapter of the American Cancer Society.

Aspen Publishers announce a new book, *Hospitals Under Fire: Strategies for Survival.* The authors are Everett A. Johnson and Richard L. Johnson, two of the American leaders in health care administration. Information on how to effectively plan and market services, how to cope with new and tighter restraints and regulations, how to win the ongoing support of physicians and staff and how to take advantage of new, lucrative opportunities on the horizon. Recommended for physicians and hospital administrators. 500 pages, $39.95.

Cervical Adenocarcinoma: A Colposcopic Atlas

By Minoru Ueki, M.D. Published 1985 by Ishiyaku EuroAmerica, Inc., 11559 Rock Island Court, Maryland Hts., St. Louis, Mo. 63043. 73 pages, $30.

The forward states that this is the first book to be published in any country on the colposcopic findings and classification of adenocarcinoma of the cervix. The author describes the five characteristic features of adenocarcinoma: papillary findings, transformation-zone-like findings, atypical vessel findings, granulation-like findings, and net-like findings. The author also lists 13 different patterns of blood vessels.

This book has an introduction describing the history and clinical value of colposcopy, the technique of colposcopy, the new international classification and documentation for adenocarcinoma, and description of the examination of cervical vessels. Five chapters follow (the atlas portion) describing and depicting the colposcopic appearances of the five types of cervical adenocarcinomas. The colposcopic pictures are in full color; the photomicrographs showing histologic appearances are in black and white—all of the photos are well done and clear.

Cervical adenocarcinoma now accounts for 5-8% of all cases of cervical cancer; the incidence is rising. The author divides cervical adenocarcinoma into subtypes since it cannot be considered a single entity. The two main divisions are true adenocarcinoma and adenosqamous carcinoma. Adenocarcinoma further is divided into the typical form in which normal amounts of mucous are secreted and the mucous secreting type which secretes excessive amounts of mucous. These three types of adenocarcinoma show five kinds of colposcopic findings listed above.

Colposcopists will find this atlas clearly depicts and describes adenocarcinoma of the cervix.—**Alvin J. Haley, M.D., Indianapolis**

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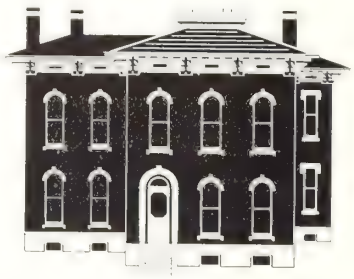
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CME QUIZ

TO OBTAIN ONE HOUR OF CATEGORY 1 AMA CME CREDIT, answer the following questions by circling the correct answer on the answer sheet below. Complete and clip the application form and mail it to: Indiana University School of Medicine, CME Division, BR 156, 1226 W. Michigan St., Indianapolis 46223.

Lung Cancer

CONTINUED FROM PAGES 671-674

1. According to the Veterans Administration Lung Study Group (VALSG),
   a. two-year survival for inoperable lung cancer patients receiving no specific therapy with disease confined to the hemithorax with or without supraclavicular lymph nodes was 3.8%.
   b. performance status did not appear to have a relationship to survival.
   c. in patients with more extensive disease (i.e., spread beyond the hemithorax supraclavicular lymph nodes) two-year survival was 0.9%.
   d. a and c are true.

2. Which of the following is false?
   a. In general, increasing the dose delivered to the primary lung cancer will increase the rate of local control.
   b. Survival of patients with inoperable lung cancer treated with irradiation with high Karnofsky scores have a higher survival than those with low scores.
   c. Increasing the primary tumor dose beyond 6000 cGy has consistently and progressively increased patient survival.
   d. A small percentage of patients (5-10%) with localized inoperable lung cancer may be cured with radiation.

3. Which of the following is true?
   a. Lung cancer at present accounts for a quarter of all cancer deaths.
   b. The majority of patients with lung cancer present with advanced local disease or distant metastasis.
   c. Surgical survival has been related to stage and histology.
   d. All are true.

4. Important factors to consider in selecting patients with non-small cell lung cancer for definitive irradiation include
   a. the amount of disease present.
   b. performance status.
   c. the sex of the patient.
   d. all of the above
   e. none of the above

5. Irradiation of non-small cell lung cancer
   a. has resulted in a five-year survival of 5-10% for inoperable limited lesions.
   b. requires attention to technical factors to ensure adequate tumor coverage and to minimize normal tissue damage.
   c. will result in a higher local control rate with increased doses.
   d. All of the above are true.

JULY CME QUIZ Answers

Following are the answers to the CME quiz that appeared in the July 1986 issue: "Inflammatory Bowel Disease: A Pediatric Perspective," by Gary J. Russell, M.D., et al.

1. c	6. d
2. a	7. c
3. d	8. a
4. b	9. c
5. d	10. c

Answer sheet for Quiz: (Lung Cancer)

1. a b c d
2. a b c d
3. a b c d
4. a b c d e
5. a b c d

I wish to apply for one hour of category 1 AMA Continuing Medical Education credit through the I.U. School of Medicine. I have read the article and answered the quiz on the answer sheet above. I understand that my answer sheet will be graded confidentially, at no cost to me, and that notification of my successful completion of the quiz (80% of the questions answered correctly) will be directed to me for my application for the Physician's Recognition Award of the American Medical Association. I also understand that if I do not answer 80% of the questions correctly, I will not be advised of my score but the answers will be published in the next issue of INDIANA MEDICINE.

Name (please print or type)

Address

Identification number (found above your name on mailing label)

Signature

To be eligible for this month's quiz, send your completed, signed application before Sept. 10, 1986 to the address appearing at the top of this page.

NEWS NOTES

I.U. Gets Second, More Powerful MRI Unit

The most versatile, super-cooled magnetic resonance imaging (MRI) unit developed is now in operation at the Indiana University Medical Center. It augments the first MRI unit in Indiana, which went into use at the I.U. Medical Center in February 1983. From their work with the first MRI unit, physicians at I.U. have contributed to the evaluation and development of MRI as an improved way of diagnosing disease, particularly those affecting the soft tissues of the body.

This second, more powerful MRI, is the first variable-strength MRI to be used in a medical center or hospital setting.

"The new scanner is the first in the world capable of providing a magnetic field that we can rapidly change from zero to 2 tesla (a term used in identifying units of magnetic strength)," says Dr. Eugene C. Klatte, chairman and professor of radiology at the I.U. School of Medicine. "This new feature will allow us to use the level of magnetic strength that is most suitable for any particular disease or area of the body that we would want to image at any given time."

Doctor Seeks Surplus Medical Books for China

Following a trip to China in 1979 where he visited hospitals and medical institutions and met with Chinese physicians, Dr. Jordan M. Phillips, a retired California physician, created at his own expense a non-profit corporation, "Medical Books for China."

While in China, he learned that, during their reign, the Red Guards went on a rampage to stamp out all Western culture. This included destroying libraries and burning medical books. Brave doctors managed to save a few volumes by hiding them in caves.

During the past seven years, Dr. Phillips and his wife, Mary, have made 25 trips to China and have arranged for about 700,000 medical books and journals, as well as audio tapes, films and slide lectures, to be sent to the Chinese doctors. The Chinese government has established a distribution committee headed by the Health Bureau and the Medical School of Tianjin to oversee fair distribution.

Freight costs from Long Beach, Calif., are paid by the Chinese government, and shipment from Tianjin is borne by the doctors and medical institutions who order materials through pre-order forms.

Dr. Phillips is appealing for additional support from the U.S. medical community for more books, journals and teaching materials. Medical books should not be older than 1960 and journals no older than 1969.

Medical books, journals, audio tapes, films and slide lectures can be donated to "Medical Books for China." Such donations are 100% tax-deductible at current market value. It is suggested that a local medical book store be contacted to establish current value.

Local post offices can provide information on favorable rates for shipping material to Dr. Phillips. Shipments should be made to: "Medical Books for China," c/o Dr. Jordan M. Phillips, 13021 E. Florence Ave., Santa Fe Springs, Calif. 90670.

28,000 Kick the Habit in Houston Experiment

An estimated 28,000 Houston area smokers kicked the habit as a result of a pilot program called "Ways to Really Stop Smoking," which was presented locally on TV and in a city paper. The information was released by the University of Texas Center for Health Promotion, based on a follow-up survey it conducted.

The economic impact of 28,000 people stopping their smoking habit translates to a savings of $177 million, the school said. The figure represents the amount it would have cost Houston employers in terms of lost days and health costs, the expense to taxpayers in health costs and disability payments, and the amount that would have been spent on cigarettes and commercial smoking cessation programs.

"Ways to Really Stop Smoking" was conducted during the last half of 1985. It offered smokers the opportunity to participate in a 21-day quit smoking program aired on Houston's Channel 2 and printed in the *Houston Post*. Ten non-celebrity role models shown in the media led Houstonians through a behavioral change sequence as they struggled to kick their smoking habit under the guidance of a clinical psychologist. The program was preceded by months of community education activities involving corporations, City of Houston employees, health practitioners, and volunteers.

Dr. Bonsett Honored as Preservationist

Dr. Charles A. Bonsett of Indianapolis, a trustee of the Indiana Historical Society, has received a Preservation Award for his successful efforts to save the Old Pathology Building on the grounds of Central State Hospital and to develop this unique structure as the Indiana Medical History Museum.

The award was presented by the Historic Landmarks Foundation of Indiana at a ceremony in Indianapolis in May.

The Old Pathology Building was built in 1895 and opened in 1896 as Indiana's first medical center. The Indiana University School of Medicine held classes in the Old Pathology Building until 1955, after which the building fell into disrepair, and demolition seemed imminent.

Dr. Bonsett led a successful effort to save the historic structure. In the late 1960s he formed the Indiana Medical History Foundation to preserve the building and to collect medical history artifacts. In 1971, through his continued efforts, the Old Pathology Building was included on the *Historic American Buildings Survey*, and in 1972 it was placed on the *National Register of Historic Places*.

(Dr. Bonsett is the author of "Medical Museum Notes," a regular monthly feature in INDIANA MEDICINE.)

Riley Children's Hospital Featured in Design Book

The design of the James Whitcomb Riley Hospital for Children will be featured in the premier issue of *Health Facilities Review*, which will be published by the American Institute of Architects. The 400-page book will showcase selected examples of progressive health care design and is geared primarily for architects. One hundred diversified building projects from across the country will be presented in four-page profiles. The Riley Hospital design and the planning for the upcoming Clinical Research Building on the Indianapolis campus are the work of Ellerbe Associates, an architectural/engineering/planning firm, with annual projects totaling more than $600 million, about half of which comes from health care projects.

New ISMA Members

Brion A. Bertsch, M.D., Muncie, family practice.

James R. Bertsch, D.O., Cambridge City, family practice.

Earl D. Brown, M.D., Beech Grove, gastroenterology.

Karen S. Israel, M.D., Indianapolis, internal medicine.

Mark D. Jacobi, M.D., Michigan City, pediatrics.

Larry W. Johnson, M.D., Michigan City, family practice.

David L. Madison, M.D., Indianapolis, general surgery.

L. Jane McDowell, M.D., Muncie, allergy and immunology.

Robert Mitchell, M.D., Kokomo, orthopedic surgery.

Rajashree Mohanty, M.D., Beech Grove, pediatrics.

Krishna C. Murthy, M.D., Princeton, internal medicine.

Mark A. Rackish, M.D., Michigan City, orthopedic surgery.

Lalit B. Savla, M.D., Valparaiso, neurology.

Richard L. Scales, M.D., Beech Grove, diagnostic radiology.

Hendrica E. Sisk, M.D., South Bend, pediatrics.

Janet L. Streepey, M.D., Michigan City, occupational medicine.

Twatchai Yamcharern, M.D., Indianapolis, plastic surgery.

Residents:

Orrin Davie, M.D., Indianapolis, otorhinolaryngology.

Michael P. Halpin, M.D., Indianapolis, thoracic surgery.

Thomas A. Richardson, M.D., Lebanon, emergency medicine.

David M. Rosentrater, M.D., Beech Grove, family practice.

Discovery Rule Applies to Dalkon Shield Cases

In response to a question certified to it by a federal appellate court, the Indiana Supreme Court said that the statute of limitations on two claims involving the Dalkon Shield should be subject to a discovery-type rule.

The two patients both filed their actions within a few months after hearing on a television program about the relationship of the Dalkon Shield to certain injuries. In both cases, the patients' injuries occurred six or more years before the program was aired. A federal trial court granted summary judgment in favor of the manufacturer on the ground that the patients' actions were barred by the Indiana two-year statute of limitations.

The appelate court certified the question to the Indiana Supreme Court to decide whether the statute of limitations barred the decisions. The Supreme Court said that the discovery rule should apply to the patients' claims, and the statute of limitations began to run from the date that the patients knew or should have known that they suffered an injury caused by the Dalkon Shield.—*Barnes v. A.H. Robins Company, Inc.*, 476 N.E. 2d 84 (Ind. Sup. Ct., April 1, 1985) (Courtesy of *The Citation*, May 15, 1986)

Platelet Transfusion Therapy Conference

The National Institutes of Health have announced a Consensus Development Conference on Platelet Transfusion Therapy for October 6 to 8. Discussion will center on questions concerning the indications for, and risks of, treatment with human blood platelets. Alternative therapies for patients with platelet disorders will also be considered.

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NEWS NOTES

Here and There . . .

Dr. Stephen W. Perkins of Indianapolis has been named a fellow of the American Academy of Facial Plastic and Reconstructive Surgery, as well as the American Academy of Cosmetic Surgeons.

Dr. Carleton D. Nordschow, chairman of the pathology department, I.U. Medical Center, will direct drug testing for the 1987 Pan American Games and the World Games indoor track and field meet in 1987.

Dr. George W. Hicks of Indianapolis was a contributing author of *Complications in Otolaryngology-Head and Neck Surgery: The Ear and Skull Base*, a book just published by the C.V. Mosby Co.

Drs. Frederick B. Stehman and **Gregory P. Sutton** of Indianapolis were in Los Angeles recently to present abstracts to the American Society of Clinical Oncology.

Dr. Glenn W. Irwin Jr. retired June 30 as Indiana University vice-president and chief executive of the I.U.-Purdue University campus in Indianapolis; Dr. Irwin, a former dean of the I.U. School of Medicine, will maintain an office at I.U.S.M. and work on special projects.

Dr. Lawrence D. Rink of Bloomington is the new president of the Indiana University School of Medicine Alumni Association; **Dr. Harold Manifold** of Bloomington is president-elect.

Dr. Maurice E. John Jr. of Jeffersonville discussed "Bright Ideas in Radial Keratotomy" at a clinical conference conducted in May by the New York Eye and Ear Infirmary.

Dr. Ned B. Hornback, chairman and professor of the Dept. of Radiation Oncology, I.U. School of Medicine, was the guest faculty lecturer at an interna tional hyperthermia seminar held in Hong Kong, June 19-25.

Dr. John E. Krueger of South Bend is the new medical director of the Hospice of St. Joseph County; he was one of the Hospice founders and has served on its board of directors since 1978.

Dr. C. Richard Yoder of Elkhart was recently given special recognition by the Elkhart County Health Department for his 36 years as a local pediatrician and health advocate; he was also named a "Sagamore of the Wabash" by Governor Orr.

Dr. Raymond J. O'Brien of Michigan City has been presented the Exchange Club's Book of Golden Deeds Award for his work with crippled children and the Special Olympics.

Dr. Thomas J. Linnemeier of Indianapolis recently addressed the European Association of Angioplasty at its meeting in Geneva.

Dr. Charles J. Yast of Merrillville has been presented the Joseph A. Festa Memorial Award by Cerebral Palsy of Northwest Indiana, Inc., making him the local CP center's "man of the year."

Dr. David L. Hurley of Columbia City has been named a diplomate of the American Board of Family Practice.

Dr. Alan Kaufman of Hammond has been named to the board of directors of the Indiana-Florida Realty Trust.

Dr. James E. Hull of Lafayette has been elected to fellowship in the American Society of Colon and Rectal Surgeons.

Dr. Donn R. Chatham, a New Albany facial plastic surgeon, recently presented a paper, "Wound Healing: Fractures the Physician Can Improve," to the Kentucky Academy of Family Physicians.

Dr. Clarence E. Ehrlich of Indianapolis was a guest speaker at the recent International Multidisciplinary Conference of Gynecologic Cancer in San Francisco.

Dr. Debra J. Myers, associate medical director of Respiratory Care at Methodist Hospital, Indianapolis, has been chosen as one of the 25 pulmonary specialists in the country to attend a symposium in Colorado Springs on the care of asthma patients.

Dr. Louis Moosey of Union Mills discussed the causes and prevention of "heart attacks" at a recent meeting of the Union Mills Lions Club.

Dr. William C. LeLiever of Indianapolis presented a paper on "The Effects of Positional Change on Optokinetic Nystagmus" at the recent annual meeting in Palm Beach, Fla. of the American Neurotology Society.

Drs. William D. Ragan, Clarence E. Ehrlich and **Robert E. Rogers** of Indianapolis attended the recent meeting in New Orleans of the American College of Obstetricians and Gynecologists; Dr. Rogers, chairman of the GYN Surgery Postgraduate Course, gave three presentations.

Dr. Scott Beede of Evansville was a guest speaker at a recent forum on arthritis at the Salem Senior Citizens Center.

Dr. Edward F. Steinmetz of Indianapolis has been elected to a three-year term on the Board of Governors of the American College of Cardiology for the state of Indiana.

Dr. Arthur Bentsen of Evansville and Marcia Yockey, WFIE-TV weather reporter, discussed "Weather and How It Affects Our Health" at the June meeting at Deaconess Hospital at the Tri-State Better Breathers.

Dr. Donald G. Cvitkovich of Hobart discussed "A Common Sense Approach to Asthma" at the May meeting at St. Mary Medical Center of the Breath-easy Club.

Dr. Peter H. Cahn, an Indianapolis ophthalmologist, was the guest speaker at a May meeting at the I.U. School of Nursing of the Parkinson's Awareness Assn.

Dr. Robert B. Jones of Indianapolis discussed AIDS at a local forum in June; he is a member of the governor's commission to study the impact of AIDS in Indiana.

Dr. George Plain, St. Joseph County health officer, was among the speakers at a June conference on AIDS conducted at the South Bend Century Center.

Dr. William Dugan, director of the Cancer Care Center at Methodist Hospital, Indianapolis, has been named chairman of the Governmental Affairs Committee, Association of Community Cancer Centers (ACCC).

Let Us Know!

Send your news items and comments to the Editor, INDIANA MEDICINE, 3935 N. Meridian St., Indianapolis 46208.

I.U. Professor Receives Three Awards

Dr. James E. Carter, Professor of Obstetrics/Gynecology and Pathology and Associate Dean of Student Affairs at the I.U. School of Medicine, has received three job performance awards.

He was one of only 12 (six faculty and six staff) to receive the Glenn W. Irwin Jr., M.D., Experience Excellence Award, presented this year for the first time to individuals whose job performance has been considered an "outstanding overall contribution" to IUPUI. He has served the university 26 years.

Dr. Carter was also the recipient of the Lola L. Lohse Faculty Appreciation Award, given annually to the faculty member "who has contributed the most support to student activities during the academic year." Finally, he received the Edward C. Moore Top Administrator Award for his demonstration of "concern for the welfare of the students."

For the Asking . . .

• **The Medical Malpractice Program** is a nationwide research and demonstration initiative of The Robert Wood Johnson Foundation. The goals of this program are to: 1) advance the state of basic knowledge about what constitutes negligent medical care, the factors that cause it, and how it can be prevented; and 2) demonstrate and evaluate the effectiveness of various legal, insurance and medical practice reforms. Up to 24 grants over the next two years will be provided to organizations in medicine, the law, the insurance industry, government and academia. Eligible projects will address topics in the following categories: 1) the behavior and practice patterns of health care professionals that contribute to or prevent medical negligence; 2) the oversight and risk management procedures of health care institutions; and 3) legal and insurance reforms. Selection of projects will be based upon their potential for significantly influencing public policy and organizational decision-making in the medical liability area. To obtain a copy of a brochure, "The Medical Malpractice Program," contact Shirley Gazsi, Communications Officer, The Robert Wood Johnson Foundation, P.O. Box 2316, Princeton, N.J. 08540—(609) 452-8701.

• **A compendium on AIDS** from *JAMA* is now available in book form. *AIDS: From the Beginning* contains everything written about acquired immunodeficiency syndrome in *JAMA* since it was identified. The book also contains introductory information on epidemiology, on virology, and on treatment. The 450-page book costs $22.50. Write AMA Book and Pamphlet Fulfillment, 535 N. Dearborn St., Chicago 60610. Phone orders are accepted at 1-800-621-8335.

• **The first of a series of medical monographs on AIDS** has been published by Abbott Laboratories. "Etiology and Epidemiology of HTLV-III Related Disease" analyzes the spread of the virus and provides detailed information about symptoms and the course of AIDS and other related diseases. "The Diagnosis and Management of Patients with HTLV-III Related Disease" considers detailed clinical issues such as patient history, physical exam and laboratory assessment. This monograph also discusses the psychological aspects of patient management. Abbott researchers now indicate that the virus is spread through heterosexual contact, in some instances. To obtain copies, write to: The HTLV—III Information Center, Abbott Laboratories, Diagnostics Division, Dept. 49-B, AP6C, Abbott Park, Ill. 60064.

• **Whooping cough** occurs in some parts of the United States in nearly epidemic proportions. Indiana and seven other states are cited in the May-June issue of "ACSH News & Views" as having experienced decreased vaccination rates and increased disease rates. The apparent reason for a drop-off in vaccination rates is the fear of vaccine reactions. This is regrettable since the incidence and seriousness of side effects is much greater with the disease than it is with the vaccine. The same issue of the newsletter also contains an extensive and interesting survey of magazines, with attention to the varying editorial policies on cigarettes. In general, publications that do not accept cigarette advertising are the ones that contain the most editorial content on cigarettes and diseases. The magazines with the most thorough coverage of smoking include *Reader's Digest, Prevention, Saturday Evening Post, Good Housekeeping*, and *Vogue*. Only *Vogue* accepts tobacco ads. Copies of "ACSH News & Views" can be obtained from ACSH, 47 Maple St., Summit, N.J. 07901.

• **"The Facts About AIDS"** is a 20-page pamphlet published by Abbott Laboratories for patients. It addresses the common concerns of parents, educators, sexually active adults and adolescents. It was written by James M. Oleske, M.D., director of the Pediatric AIDS Program for the Children's Hospital of New Jersey, and by Gwendolyn B. Scott, M.D., head of Pediatric Infectious Disease of Jackson Memorial Hospital, Miami. Copies are available for $3.50 from AIDS Education, P.O. Box 2376, Bloomfield, N.J. 07003.

• **"Malignant Melanoma of the Skin: An Increasingly Common Cancer"** is the title of a 20-page booklet published by the American Council on Science and Health. The increase is accounted for by a change in clothing fashions which expose more skin to the sun's rays. Even though melanomas develop in middle and later ages, exposure when young is thought to be of causative significance. To obtain a complimentary copy, send a SASE (39¢, #10) to Melanoma Report, ACSH, 47 Maple St., Summit, N.J. 07901.

New Prefix for I.U.

The prefix for all campus telephone numbers at Indiana University-Purdue University at Indianapolis has been changed from 264 to 274. The change went into effect last month.

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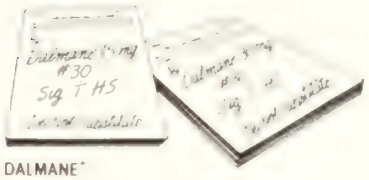
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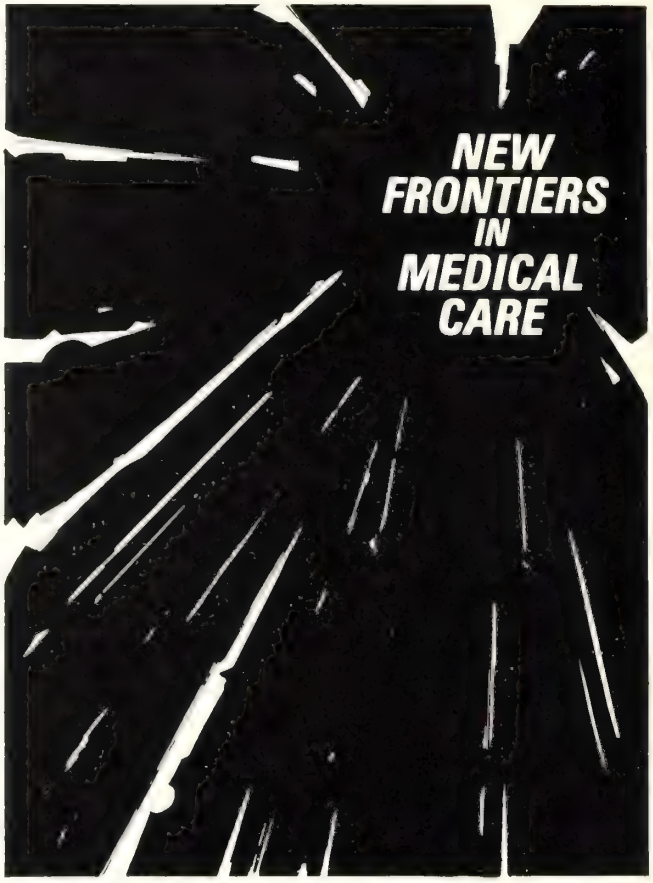
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ABOUT THE COVER

In discussing doctor-patient relationships, an Indianapolis pastor asks, "Is there a model which might give us insight and ethical guidance in our decision-making at the boundaries of life?" He says there is, and it's called "The Physician's Convenant." See "Doctor-Patient Relationships: A Pastor's Perspective," page 780.—COVER BY FRED KINGHORN

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MEDICAL MUSEUM NOTES



CHARLES A. BONSETT, M.D., Indianapolis

INDIANA WAS THE FOCUS of medical attention and controversy in 1982 when food and medical care were withheld from a severely disabled newborn boy. Although Indiana's legal system upheld the decision and action of the involved parents, physicians and hospital, the incident ultimately led to the "Baby Doe Act," which became a national law in October 1984.

A similar case gained national attention in November 1915 when another infant boy, born with multiple congenital anomolies, was allowed to die. The consulting surgeon stated that "I did not operate ... because of the deformity of the child and, second, because of the seriousness of the case. I did not urge the parents to follow my advice. I simply gave my opinion as a consulting surgeon."

The incident occurred in Chicago's German-American Hospital, the surgeon being Dr. H.J. Haiselden. In making his decision, Dr. Haiselden asked the opinion of "a score of the hospital's nurses." Only one was of the opinion that an effort should be made to save the infant.

The public in general was of a different opinion. One woman became so concerned that she kidnapped the baby but was unable to escape the hospital. The letters to newspaper editors were generally of a scolding character toward Dr. Haiselden, some making the point that deformity does not necessarily preclude the individual's ability to become a useful member of society. Charles Steinmetz and Fyodor Dostoevsky were cited, among others, as examples.

The opinions of most Indiana physicians were supportive of Dr. Haiselden. There were exceptions, however, some quite scathing—Dr. Hannah Graham's, for example. It had been mentioned that, although Dr. Haiselden was a bachelor, he had adopted two infant girls who had been abandoned by their parents, thus showing his love and concern for children. Dr. Graham (who had never married and who had also adopted two children) was not impressed. She described Dr. Haiselden's behavior as an outrage. "No one has a right to take life, much less a physician whose religion should be to conserve life."

The Baby Doe Case of 1915

Dr. John Sluss, former superintendent of City Hospital (now Wishard Memorial), stated that Dr. Haiselden's course of action was correct.

Dr. Thomas B. Eastman, an OB-GYN professor at the I.U. School of Medicine, seemed unconcerned. "Well, I don't know as I have thought of the matter. Offhand, however, owing to the described mental condition, the action is probably for the best."

Another woman physician, Dr. Amelia Keller, said, "Laying aside the question of humanity, the thing to do was to let the infant alone. People, however, are not educated to that idea, and the majority of the public would hold that the child had a right to live."

Dr. R.F. Bigger's comment was, "Sometimes ethics have to be thrown to the winds."

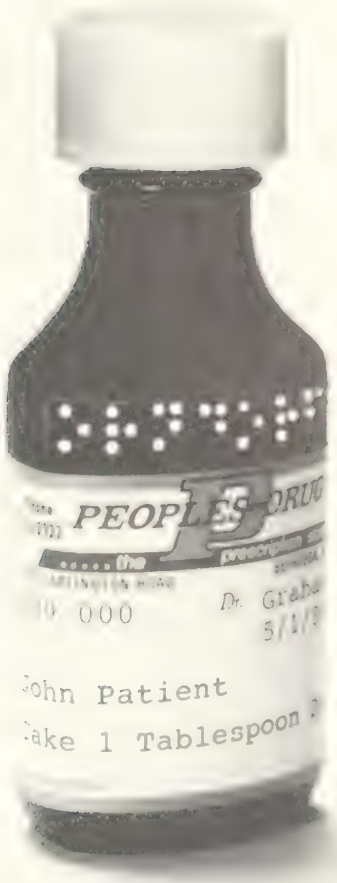
Dr. Frank B. Wynn, a professor of medicine at I.U., and author of *The Ten Commandments of Medical Ethics* (J Indiana State Med Assoc, January 1977), gave this opinion: "Sociologically speaking, the world does not want such people. The attitude of scientists and doctors is that our own function is to save life. No one can say that the supposed defective would not have amounted to something. For that matter we are called upon to see criminals the world would be better off without, but that is for the Master to say, not us. This is the higher ethical view."

A coroner's jury consisting of Dr. Ludvig Hektoen and five other distinguished physicians was convened to consider the case and to establish a standard of professional conduct for the future. The coroner's report showed the infant to have had an imperforate anus; the two kidneys were fused into one, located on the left side with but one ureter. The right ear and auditory canal were absent. The neck was shortened, the chin being fused to the shoulder. The coccyx was absent. Microscopical hemorrhages were present in the spinal cord and in the brain. The jury upheld Dr. Haiselden, stating that he was morally and ethically justified in refusing to perform an operation which his conscience did not sanction.

By December 1915, the incident was almost but not quite forgotten. Dr. Haiselden was now facing expulsion from the Chicago Medical Society, not for his behavior in this case, but for the opinions expressed in articles which he wrote about the case.

Back in Indiana, Dr. Hannah Graham was reminded of the event one morning at 4 a.m. by the ringing of the telephone, which let her know that a birth was imminent. Outside, a freezing rain was falling and the streets were sheets of ice. Driving was difficult and precarious. In order to secure traction for her tires, she tore her heavy cape to shreds, tying the strips at intervals around the tires between the spokes. She managed to drive several miles this way until she came to a small grade which stopped her again. Two pedestrians came to her aid. She then stopped at a family grocery store, aroused its proprietor and bought a length of rope which she cut into short lengths to again provide traction loops for her tires. The 20-minute drive took 2½ hours to complete.

Dr. Graham arrived at her destination 10 minutes too late. Her efforts had been in vain. In her frustration, she thought of Dr. Haiselden and found some degree of solace. Although their problems were different, the solution depended basically on the physician's philosophy of life. There was nothing passive in Dr. Hannah Graham's philosophy. For her, *you had to make the effort.*



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PEOPLES DRUG

WHAT'S NEW?

News of what is new in the medical supply industry is composed of abstracts from news releases by book publishers and manufacturers of pharmaceuticals, clinical laboratory supplies, instruments and surgical appliances. Each item is published as news and does not neces sarily constitute an endorsement of a product or recommendation for its use by INDIANA MEDICINE or by the Indiana State Medical Association.

Abbott Laboratories announces "A Textbook for the Clinical Application of Therapeutic Drug Monitoring." More than 70 internationally recognized experts in the field contributed to the 500-page volume. Drug monitoring is especially important as the number of drugs with very narrow ranges of effectiveness become available. Too small a dose — no effect; too large a dose — toxicity. Small, easy to use laboratory instruments, such as the Abbott TDx, provide results in a matter of minutes.

Schering-Plough announces the development and production of "Intron A", the genetically derived alpha-2 interferon. It is approved in the U.S. for treatment of hairy cell leukemia, and will be marketed immediately.

LaClede Research Laboratories is marketing Oralbalance™ Long Lasting Gel which contains ingredients that produce an antibacterial system similar to the protective system found in normal saliva. The preparation is especially designed to relieve dry mouth.

Chronomite Laboratories announces The Instant-Flow tankless water heater. The device measures 6″x9″x2½″ and may be installed within 18 inches of the faucet. It supplies hot water immediately and continuously, and eliminates the necessity for a storage type hot water heater which wastes energy. Instant-Flow conserves space and saves money since it heats water only when needed.



"I'm worried. I'm feeling too good."

General Electric has a new CT 9000 HP (high performance) system, specifically designed to shorten patient exams, decrease image reconstruction times and reduce the storage space and retrieval time required to archive CT images. In addition, an expanded 30,000 image capacity optical disk system provides fast, convenient access to archived patient studies and reduces reliance on more cumbersome storage methods.

Hospital Phone, Inc. has introduced "The Hospital Phone," a sterile-pack patient telephone that offers protection from communicable diseases. It is a one-piece lightweight unit that may be included in patient kits. The patient receives an easy-to-use, hygienic telephone that can be taken home when discharged.

Hewlett-Packard is offering pediatric ECG analysis as a standard feature on all HP 4760A interpretive PageWriter cardiographs at no additional cost. This interpretation tool has, in the past, been purchased separately.

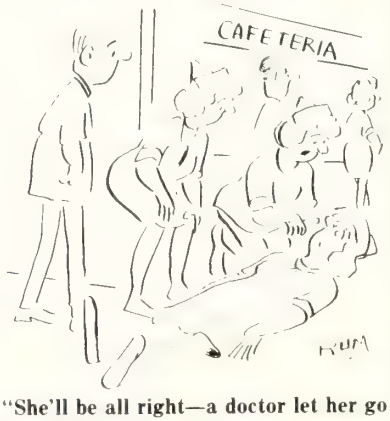
Hewlett-Packard introduces a low-priced, easy-to-use C02/02 monitoring system for operating rooms. This provides anesthesiologists with the ability to monitor a variety of vital signs on ventilated patients in the OR.

General Medical announces FDA approval for marketing Drionic® , an electronic device that will keep people with heavy sweating problems dry for six weeks at a time. The device is based on the principle of iontophoresis and has been successfully used in England for several years.

Biomecca Australia Ltd. manufactures advanced coronary care equipment. They are introducing a CSI Central Station, designed to serve as a nursing aid. This advanced cardiovascular eqiupment uses radio control to monitor the heart rate of patients absent from their beds. The CSI Central Station is a desk-top terminal that can monitor up to 10 individual ECG readings, while providing numerical information on the bed number, time of day and heart rate alarms.

Hewlett-Packard announces a new obstetrical management system (HP 80225A), with complete surveillance and fetal-heart-rate (FHR) warning capability, that provides immediate information concerning patient status. It is available in four- or nine-bed configuration. Trended fetal-trace recordings for up to nine patients can be displayed on a single monitor screen.

Warner Lambert, maker of Trident sugarless gum, reports that researchers, at Iowa's Dows Institute for Dental Research, have demonstrated that chewing sugarless gum after eating sweets will lower the acidity between teeth to an effective degree which cannot be obtained by rinsing the mouth and teeth with water. Since sweet snacks occur usually at a time or in a location where brushing is not possible, use of sugarless gum for 10 minutes will remove the acid between teeth for at least 30 minutes.



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FUTURE FILE

Practice Management

The ISMA and the Resident Medical Society will co-sponsor a practice management workshop Sept. 19 and 20 at Community Hospital North of Indianapolis.

Staff from the AMA Dept. of Practice Management will discuss patient relations, accounting systems, personnel management, third-party payers and medical records. ISMA legal counsel will review corporate and malpractice law requirements in Indiana.

Registration fees have been discounted for ISMA members, their spouses and office staff. For more information, contact Carol Ann Cunningham at ISMA headquarters, Indianapolis.

Management Series

"The 1986 Physician in Management Series, I & II" is a CME course that runs from Oct. 6 to 10 at the Omni-Charleston Place, Charleston, S.C. It is accredited for 31 CME hours.

The correspondent is Sherry Mason, American Academy of Medical Directors, 4830 W. Kennedy Blvd., Suite 648, Tampa, Fla. 33609—(813) 873-2000.

Biking in New Zealand

"Bicycle Tours of New Zealand" provides several interesting tours of various lengths and prices during the warmer months while much of the U.S. is freezing.

Some tours are oriented to physicians and are interspersed with socio-economic and educational lectures on practice management, business management and health care.

If your pedal-pushers wear out, there is a van that will transport both you and your bike, as required. The exchange rate on the New Zealand dollar is favorable. The tour with the lectures is mentioned as tax deductible. Children may accompany.

Write Bruce O'Halloran, P.O. Box 11296, Ellerslie, Auckland 5, New Zealand.

Head and Neck Surgery

A two-day Head and Neck Surgery Workshop sponsored by the Society of Head and Neck Surgeons will be conducted Oct. 18 and 19 at the Tulane Medical Center Auditorium, New Orleans, La.

The workshop is accredited for 12 AMA Category 1 hours. Deadline for pre-registration is Oct. 3.

For further information, contact the Society of Head and Neck Surgeons, 13 Elm St., Manchester, Mass. 01944—(617) 927-8330.

Sleep/Wake Disorders

"Sleep/Wake Disorders in Primary Care Practice" is the title of an all-day seminar to be presented by the Sleep/Wake Disorders Center of Community Hospitals, on Sept. 24 at the Holiday Inn North in Indianapolis. Tuition is $75 for physicians, $50 for non-physicians and $10 for residents in training.

The correspondent is Carolyn Roeder, Community Hospitals, Indianapolis—(317) 353-4269.

Indiana ACP Meeting

The 1986 Scientific Meeting of the Indiana Chapter, American College of Physicians, will be held all day Friday and Saturday morning, Nov. 7 and 8, in Indianapolis.

The program, emphasizing general internal medicine, will be held at the Sheraton Marten House, 1806 W. 86th St. For more information, contact Richard C. Powell, M.D., ACP Governor, I.U. School of Medicine, 545 Barnhill Drive, Indianapolis 46223—(317) 274-8133.

The *Journal of the American Medical Association* publishes a list of CME courses for the United States twice yearly. The January listing features courses offered from March through August; the July listing features courses offered from September through February.

Rheumatology

"Focus on Rheumatology—1986" is the subject of a conference Nov. 7 and 8 at the University of Wisconsin Clinical Science Center in Madison. AMA Category 1 credit is 10 hours.

Contact Sarah Z. Aslakson, 465-B WARF Bldg., 610 Walnut St., Madison, Wisc. 53705—(608) 263-2856.

Urinary Incontinence

"Surgical Treatment of Urinary Incontinence" will be the title of a CME course to be given at the Concourse Hotel, Madison, Wisc., Oct. 23 and 24. The course is accredited for 15 AMA Category 1 hours.

The correspondent is Sarah Z. Aslakson, 465-B WARF Bldg., 610 Walnut St., Madison, Wisc. 53705—(508) 263-2856.

Seminars in Pediatrics

"Seminars in Pediatrics" will be conducted Oct. 24 and 25 at the University of Wisconsin Clinical Science Center in Madison. AMA Category 1 credit is for 10 hours.

Contact Sarah Z. Aslaskon, 465-B WARF Bldg., 610 Walnut St., Madison, Wisc. 53705—(608) 263-2856. Wisconsin vs. Illinois football tickets are available.

Blood Pressure Control

The National Conference on High Blood Pressure Control will be held at The Tropicana Hotel and Resort in Las Vegas, April 24 to 26, 1987. The theme is "High Blood Pressure Control: Consensus Amid Controversy."

The Conference is seeking papers that address new approaches to today's challenges in the detection, treatment, and long-term management of the hypertensive patient. Guidelines regarding specific areas for papers and rules for submitting abstracts may be obtained by contacting the National Conference on High Blood Pressure Control, 2121 Wisconsin Ave., N.W., Suite 410, Washington, D.C. 20007—(202) 944-3176.

Chicago CME Courses

The Chicago Medical School announces the following CME courses for October:

Oct. 1—Outpatient Management of Obstructive Lung Diseases; James Fish, M.D., Thomas Jefferson University Hospital, Philadelphia.

Oct. 15—Treatment of Head and Neck Cancer; Edwin Cadman, M.D., University of California, San Francisco.

Neither course requires registration or a fee. Both will be held at the University of Health Sciences/Chicago Medical School, 333 Green Bay Road, North Chicago, Ill. For information, call (312) 578-3215.

Transurethral Ureteroscopy

"Transurethral Ureteroscopy" is the subject of a seminar and workshop to be conducted by the UC San Diego School of Medicine at the LaJolla Marriott, San Diego, Nov. 8 and 9, and again April 25 and 26, 1987. Thirteen CME credit hours will be awarded. The fee is $375.

Contact the Office of CME, M017, UC San Diego School of Medicine, LaJolla, Calif. 92093—(619) 534-3940.



"I think we can rule out Anorexia Nervosa."

Kidney Stones

"Renal Calculi Advances in Diagnosis and Management" is the title of a CME meeting to be conducted by the Kidney Foundation of Greater Cincinnati on Sept. 26 at the Omni Netherland Plaza.

The key speaker will be Dr. Frederic L. Coe of the Pritzer School of Medicine. The meeting is accredited for five Category 1 hours.

Contact the Kidney Foundation at (513) 961-8105.

The Menstrual Cycle

The Seventh Conference of the Society for Menstrual Cycle Research meets June 4-6, 1987, in Ann Arbor, Mich. The subject will be "Sexuality and the Menstrual Cycle: Clinical and Sociocultural Implications."

Participants in the program are invited and abstracts of articles will be accepted until Dec. 1.

Contact Nancy Reame, Ph.D., R.N., Program Director, Parent-Child Nursing, University of Michigan, 400 N. Ingalls, Ann Arbor, Mich. 48109—(313) 763-0016.

Indiana University CME

Sept. 17-18: Second Symposium on Endothelial Seeding, Hyatt Regency, Indianapolis.

Sept. 29-Oct. 1: Advanced Echocardiography, Hyatt Regency, Indianapolis.

Oct. 3: Office Orthopedics, Sheraton Marten House, Indianapolis.

Oct. 3: Team Approach to Congenital Facial Deformities, Holiday Inn Convention Center, Fort Wayne.

Oct. 8-9: Care of the Seriously Ill Child, Holiday Inn Union Station, Indianapolis.

Oct. 18-19: Legal Role of the Expert: A Focus on Child Abuse, Adam's Mark Hotel, Indianapolis.

Oct. 24: Physicians Approach to Exercise Injuries, Brown County Inn, Nashville, Ind.

Contact Melody Dian, CME, I.U. School of Medicine—(317) 274-8353.

Methodist Hospital CME

Oct. 15: Symposium on Intraoperative Radiation Therapy, Methodist Hospital Auditorium, Indianapolis.

Nov. 7-8: Advanced Trauma Life Support, Methodist Hospital, Wile Hall Room 317, Indianapolis.

Nov. 12: Lester Bibler, M.D., Annual F.P. Lectureship on "Practical Topics for the Care of the Elderly," Methodist Hospital Auditorium, Indianapolis.

Nov. 12-13: 5th Annual Pediatric Critical Care Symposium, Radisson Plaza Hotel, Indianapolis.

Nov. 19: Prolongation of Life: Ethical Dilemmas of Modern Medical Technology, Part II, 1982-1986. Co sponsored by St. Vincent Hospital. Hyatt Regency, Indianapolis.

For more information, contact Dixie Estridge, CME coordinator, Graduate Medical Center, Methodist Hospital of Indiana—(317) 929-3733.

Rhinoplasty

"Rhinoplasty: Nasal Aesthetic and Reconstructive Surgery" is the title of a CME course to be conducted at the Embassy Suites Hotel, Indianapolis, April 2-5, 1987.

The sponsors are the American Academy of Facial Plastic and Reconstructive Surgery and the I.U. School of Medicine.

For details, write to AAFPRS Foundation, 1st American Bank NIA, 740 15th St., N.W., Washington, D.C. 20005.

Family Therapy

"Marriage and Family Therapy for Beginners" is the subject of a CME session to be conducted by the Menninger Foundation Oct. 6 to 9 in Topeka, Kansas.

The tuition is $275 per person. This includes a social hour on Monday, but does not cover meals, lodging and transportation. The registration deadline is Sept. 15.

Call the Menninger Foundation in Topeka at (913) 273-7500, ext. 5992.

CANCER CORNER

WILLIAM M. DUGAN, JR., M.D.
Methodist Hospital Cancer Care Center, Indianapolis

Symposium on Intraoperative Radiation Therapy will be held Wednesday, Oct. 15. Organized by the Methodist Hospital of Indiana Graduate Medical Center, the symposium has been designed for surgeons, medical oncologists, radiation oncologists, gastroenterologists, and proctologists to introduce the new procedure of Intraoperative Radiation Therapy (IORT). Nurses and allied health professionals are also welcome.

The faculty includes: Ralph Dobelebower, M.D., Ph.D., Professor and Chairman, Department of Radiation Therapy, Medical College of Ohio; Peter Garrett, M.D., Radiation Therapy, Methodist Hospital of Indiana; Alfred Goldson, M.D., Professor and Chairman, Department of Radiation Therapy, Howard University Hospital; and David L. Rosemin, M.D., Professor of Surgery, Department of General Surgery, Rush Presbyterian St. Luke Medical Center.

Maximal enrollment has been set as well as a registration fee of $25. Registration prior to Oct. 10 is advised. As an organization accredited for continuing medical education, Methodist Hospital of Indiana designates that this continuing education activity meets the criteria for 3½ credit hours in Category 1 of the Physician's Recognition Award of the AMA.

For further information, call the Continuing Medical Education Office: 317/929-3733.

Intensive Review of Hematology-Oncology will be held in Boston, Oct. 20-24. Sponsored by the Harvard Medical School Department of Continuing Education, the course will provide a broad overview of hematology and medical oncology as well as an up-to-date review of recent advances in the pathophysiology, diagnosis, and therapy of hematologic malignancies, red cell, and coagulation disorders.

This offering meets the criteria for 41 credit hours in Category 1 of the Physician's Recognition Award.

Registration is $550. Residents and Fellows with a letter of verification from their Department Chairman, $350. For more information regarding registration and accommodations, contact: The Harvard Medical School, Department of Continuing Education, Boston, Mass. 02115, or phone 617/732-1525, Monday-Friday, 10 a.m. to 4 p.m.

Radiation Therapy, Nutrition and You—A Videocassette. In conjunction with the ASRT Educational Foundation, the Methodist Hospital of Indiana has developed a videotape to assist patients and their families in maintaining an adequate diet at a time when nutrition support is extremely important. The videocassette helps to educate patients in layman's terms regarding nutrition and can be easily shown to the patient in the convenience of the hospital department.

The videocassette has won honorable mention for Methodist Hospital in the National Audiovisual Competition, and copies have already been requested by over 60 individuals serving the cancer community.

This 10-minute videocassette may be purchased for $125 on ½" VHS format only. For more information contact: ASRT Educational Foundation, 1500 Central Ave., S.E., Albuquerque, N.M. 87123, or call 505/298-4500.

Ninth Annual Bristol-Myers Symposium on Cancer Research: Mechanisms of Drug Resistance in Neoplastic Cells. Organized by the Vincent T. Lombardi Cancer Research Center of Georgetown University School of Medicine, Washington, D.C.

Inquiries: Lillian Kamal, Administrator, Vincent T. Lombardi Cancer Research Center, Georgetown University, 3800 Reservoir Road, NW, Washington, D.C. 20007.

Immunology of Malignant Disease. Will be presented by the R. Livingston Ireland Cancer Center, University Hospital of Cleveland, Sept. 27. Topics include: Monoclonal Antibodies Treatment of Malignant Melanoma, presented by Alan Houghton, M.D., of the Memorial Sloan-Kettering Cancer Center; Interferons: Clinical Pharmacology and Anti-Neoplastic Activity by Paul Nadler, M.D., Ph.D., of Knoll Pharmaceuticals; Interleukin-2 Alone and Interleukin-2 Plus Lymphokine Activated Killer Cells in Cancer Therapy, presented by Ronald Steis, M.D., of the National Cancer Institute.

For additional information, contact: Barbara Guy, Assistant to the Director, Ireland Cancer Center, Lowman Building-211, University Hospital of Cleveland, 2074 Abington Road, Cleveland, Ohio 44106—phone 216/844-7856.

Legislative Approaches to a Smoke-Free Society, published by Americans for Nonsmokers' Rights, (the nation's largest nonsmokers' rights organization) was recently announced by the U.S. Surgeon General, D. Everett Koop, M.D., as the nation's first strategy manual for local citizens on how to fight for nonsmokers' rights.

The 125-page text and 750-page appendix of 120 documents contains a summary of the documented health hazards of second-hand smoke, as well as tips on how to write legislation, the basics of grassroots organizing and political lobbying, how to deal with the media, how to address issues that will be raised, and how to refute arguments made by the tobacco lobby.

The book may be obtained through the American Nonsmokers' Rights Foundation, 2054 University Ave., Suite 500, Berkeley, Calif. 94704.

10th Annual Cancer Symposium will take place in San Diego, Oct. 27-29. Sponsored by the Scipps Memorial Hospital's Cancer Center. The enrollment fee is $350. Meets the criteria for accreditation by the AMA. For further information regarding registration and accommodations write: Nomi Feldman, Conference Coordinator, 3770 Tansy, San Diego, Calif. 92121 or phone 619/453-6222.

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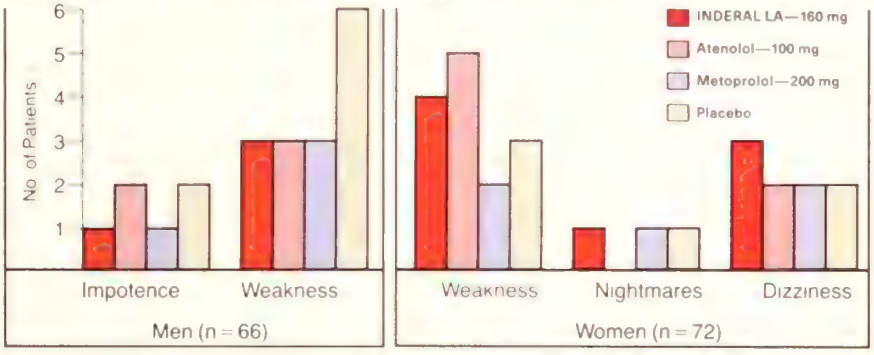
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CONTRAINDICATIONS

Propranolol hydrochloride (INDERAL® LA): Propranolol is contraindicated in 1) cardiogenic shock, 2) sinus bradycardia and greater than first degree block, 3) bronchial asthma, 4) congestive heart failure (see WARNINGS) unless the failure is secondary to a tachyarrhythmia treatable with propranolol.

Hydrochlorothiazide: Hydrochlorothiazide is contraindicated in patients with anuria or hypersensitivity to this or other sulfonamide-derived drugs.

WARNINGS

Propranolol hydrochloride (INDERAL® LA): CARDIAC FAILURE. Sympathetic stimulation may be a vital component supporting circulatory function in patients with congestive heart failure, and its inhibition by beta blockade may precipitate more severe failure. Although beta blockers should be avoided in overt congestive heart failure, if necessary, they can be used with close follow-up in patients with a history of failure who are well compensated, and are receiving digitalis and diuretics. Beta-adrenergic blocking agents do not abolish the inotropic action of digitalis on heart muscle.

IN PATIENTS WITHOUT A HISTORY OF HEART FAILURE, continued use of beta blockers can, in some cases, lead to cardiac failure. Therefore, at the first sign or symptom of heart failure, the patient should be digitalized and/or treated with diuretics, and the response observed closely, or propranolol should be discontinued (gradually, if possible).

IN PATIENTS WITH ANGINA PECTORIS, there have been reports of exacerbation of angina and, in some cases, myocardial infarction following *abrupt* discontinuance of propranolol therapy. Therefore, when discontinuance of propranolol is planned the dosage should be gradually reduced and the patient carefully monitored. In addition, when propranolol is prescribed for angina pectoris, the patient should be cautioned against interruption or cessation of therapy without the physician's advice. If propranolol therapy is interrupted and exacerbation of angina occurs, it usually is advisable to reinstitute propranolol therapy and take other measures appropriate for the management of unstable angina pectoris. Since coronary artery disease may be unrecognized, it may be prudent to follow the above advice in patients considered at risk of having occult atherosclerotic heart disease who are given propranolol for other indications.

THYROTOXICOSIS. Beta blockade may mask certain clinical signs of hyperthyroidism. Therefore, abrupt withdrawal of propranolol may be followed by an exacerbation of symptoms of hyperthyroidism, including thyroid storm. Propranolol does not distort thyroid function tests.

IN PATIENTS WITH WOLFF-PARKINSON-WHITE SYNDROME, several cases have been reported in which, after propranolol, the tachycardia was replaced by a severe bradycardia requiring a demand pacemaker. In one case this resulted after an initial dose of 5 mg propranolol.

MAJOR SURGERY. The necessity or desirability of withdrawal of beta-blocking therapy prior to major surgery is controversial. It should be noted, however, that the impaired ability of the heart to respond to reflex adrenergic stimuli may augment the risks of general anesthesia and surgical procedures.

Nonallergic Bronchospasm (eg, chronic bronchitis, emphysema)— PATIENTS WITH BRONCHOSPASTIC DISEASES SHOULD, IN GENERAL, NOT RECEIVE BETA BLOCKERS. INDERAL should be administered with caution, since it may block bronchodilation produced by endogenous and exogenous catecholamine stimulation of beta receptors.

DIABETES AND HYPOGLYCEMIA. Beta-adrenergic blockade may prevent the appearance of certain premonitory signs and symptoms (pulse rate and pressure changes) of acute hypoglycemia in labile insulin-dependent diabetes. In these patients, it may be more difficult to adjust the dosage of insulin. Hypoglycemic attacks may be accompanied by a precipitous elevation of blood pressure.

Hydrochlorothiazide: Thiazides should be used with caution in severe renal disease. In patients with renal disease, thiazides may precipitate azotemia. In patients with impaired renal function, cumulative effects of the drug may develop.

Thiazides should also be used with caution in patients with impaired hepatic function or progressive liver disease, since minor alterations of fluid and electrolyte balance may precipitate hepatic coma.

Thiazides may add to or potentiate the action of other antihypertensive drugs. Potentiation occurs with ganglionic or peripheral adrenergic-blocking drugs.

Sensitivity reactions may occur in patients with a history of allergy or bronchial asthma.

The possibility of exacerbation or activation of systemic lupus erythematosus has been reported.

PRECAUTIONS

Propranolol hydrochloride (INDERAL® LA): GENERAL. Propranolol should be used with caution in patients with impaired hepatic or renal function. Propranolol is not indicated for the treatment of hypertensive emergencies.

Beta-adrenoreceptor blockade can cause reduction of intraocular pressure. Patients should be told that propranolol may interfere with the glaucoma screening test. Withdrawal may lead to a return of increased intraocular pressure.

CLINICAL LABORATORY TESTS. Elevated blood urea levels in patients with severe heart disease, elevated serum transaminase, alkaline phosphatase, lactate dehydrogenase.

DRUG INTERACTIONS. Patients receiving catecholamine-depleting drugs, such as reserpine, should be closely observed if propranolol is administered. The added catecholamine-blocking action may produce an excessive reduction of resting sympathetic nervous activity, which may result in hypotension, marked bradycardia, vertigo, syncopal attacks, or orthostatic hypotension.

CARCINOGENESIS, MUTAGENESIS, IMPAIRMENT OF FERTILITY: Long-term studies in animals have been conducted to evaluate toxic effects and carcinogenic potential. In 18-month studies, in both rats and mice, employing doses up to 150 mg/kg/day, there was no evidence of significant drug-induced toxicity. There were no drug-related tumorigenic effects at any of the dosage levels. Reproductive studies in animals did not show any impairment of fertility that was attributable to the drug.

PREGNANCY: Pregnancy Category C. Propranolol has been shown to be embryotoxic in animal studies at doses about 10 times greater than the maximal recommended human dose. There are no adequate and well-controlled studies in pregnant women. Propranolol should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

NURSING MOTHERS. Propranolol is excreted in human milk. Caution should be exercised when propranolol is administered to a nursing mother.

PEDIATRIC USE. Safety and effectiveness in children have not been established.

Hydrochlorothiazide: GENERAL. Periodic determination of serum electrolytes to detect possible electrolyte imbalance should be performed at appropriate intervals.

All patients receiving thiazide therapy should be observed for clinical signs of fluid or electrolyte imbalance, namely: Hyponatremia, hypochloremic alkalosis, and hypokalemia. Serum and urine electrolyte determinations are particularly important when the patient is vomiting excessively or receiving parenteral fluids. Medication such as digitalis may also influence serum electrolytes. Warning signs irrespective of cause are: Dryness of mouth, thirst, weakness, lethargy, drowsiness, restlessness, muscle pains or cramps, muscular fatigue, hypotension, oliguria, tachycardia, and gastrointestinal disturbances such as nausea and vomiting.

Hypokalemia may develop, especially with brisk diuresis, when severe cirrhosis is present, or during concomitant use of corticosteroids or ACTH.

Interference with adequate oral electrolyte intake will also contribute to hypokalemia. Hypokalemia can sensitize or exaggerate the response of the heart to the toxic effect of digitalis (eg, increased ventricular irritability). Hypokalemia may be avoided or treated by use of potassium supplements, such as foods with a high potassium content.

Any chloride deficit is generally mild and usually does not require specific treatment, except under extraordinary circumstances (as in liver or renal disease). Dilutional hyponatremia may occur in edematous patients in hot weather; appropriate therapy is water restriction, rather than administration of salt, except in rare instances when the hyponatremia is life-threatening. In actual salt depletion, appropriate replacement is the therapy of choice.

Hyperuricemia may occur or frank gout may be precipitated in certain patients receiving thiazide therapy.

Insulin requirements in diabetic patients may be increased, decreased, or unchanged. Diabetes mellitus which has been latent may become manifest during thiazide administration.

If progressive renal impairment becomes evident, consider withholding or discontinuing diuretic therapy.

Thiazides may decrease serum PBI levels without signs of thyroid disturbance.

Calcium excretion is decreased by thiazides. Pathologic changes in the parathyroid gland with hypercalcemia and hypophosphatemia have been observed in a few patients on prolonged thiazide therapy. The common complications of hyperparathyroidism, such as renal lithiasis, bone resorption, and peptic ulceration, have not been seen. Thiazides should be discontinued before carrying out tests for parathyroid function.

DRUG INTERACTIONS. Thiazide drugs may increase the responsiveness to tubocurarine.

The antihypertensive effects of thiazides may be enhanced in the postsympathectomy patient. Thiazides may decrease arterial responsiveness to norepinephrine. This diminution is not sufficient to preclude effectiveness of the pressor agent for therapeutic use.

PREGNANCY: Pregnancy Category C. Thiazides cross the placental barrier and appear in cord blood. The use of thiazides in pregnancy requires that the anticipated benefit be weighed against possible hazards to the fetus. These hazards include fetal or neonatal jaundice, thrombocytopenia, and possibly other adverse reactions which have occurred in the adult.

NURSING MOTHERS. Thiazides appear in human milk. If use of the drug is deemed essential, the patient should stop nursing.

PEDIATRIC USE. Safety and effectiveness in children have not been established.

ADVERSE REACTIONS

Propranolol hydrochloride (INDERAL® LA): Most adverse effects have been mild and transient and have rarely required the withdrawal of therapy.

Cardiovascular: Bradycardia; congestive heart failure; intensification of AV block; hypotension; paresthesia of hands; thrombocytopenic purpura; arterial insufficiency, usually of the Raynaud type.

Central Nervous System: Lightheadedness; mental depression manifested by insomnia, lassitude, weakness, fatigue, reversible mental depression progressing to catatonia; visual disturbances; hallucinations; an acute reversible syndrome characterized by disorientation for time and place; short-term memory loss; emotional lability; slightly clouded sensorium; and decreased performance on neuropsychometrics.

Gastrointestinal: Nausea, vomiting, epigastric distress, abdominal cramping, diarrhea, constipation, mesenteric arterial thrombosis; ischemic colitis.

Allergic: Pharyngitis and agranulocytosis, erythematous rash, fever combined with aching and sore throat, laryngospasm and respiratory distress.

Respiratory: Bronchospasm.

Hematologic: Agranulocytosis, nonthrombocytopenic purpura, thrombocytopenic purpura.

Auto-Immune: In extremely rare instances, systemic lupus erythematosus has been reported.

Miscellaneous: Alopecia, LE-like reactions, psoriasiform rashes, dry eyes; male impotence, and Peyronie's disease have been reported rarely. Oculomucocutaneous reactions involving the skin, serous membranes, and conjunctivae reported for a beta blocker (practolol) have not been associated with propranolol.

Hydrochlorothiazide:

Gastrointestinal: Anorexia, gastric irritation, nausea, vomiting, cramping, diarrhea, constipation, jaundice (intrahepatic cholestatic jaundice), pancreatitis, sialadenitis.

Central Nervous System: Dizziness, vertigo, paresthesias, headache, xanthopsia.

Hematologic: Leukopenia, agranulocytosis, thrombocytopenia; aplastic anemia.

Cardiovascular: Orthostatic hypotension (may be aggravated by alcohol, barbiturates, or narcotics).

Hypersensitivity: Purpura, photosensitivity, rash, urticaria, necrotizing angiitis (vasculitis, cutaneous vasculitis), fever, respiratory distress, including pneumonitis, anaphylactic reactions.

Other: Hyperglycemia, glycosuria, hyperuricemia, muscle spasm, weakness; restlessness, transient blurred vision.

Whenever adverse reactions are moderate or severe, thiazide dosage should be reduced or therapy withdrawn.

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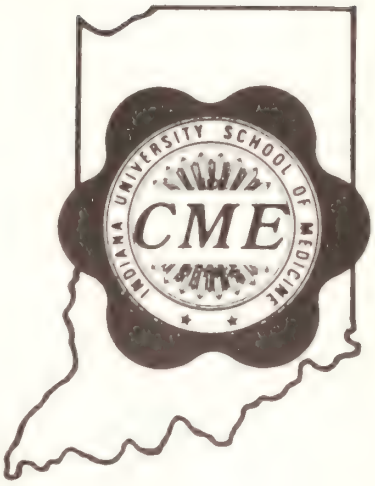
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Mammography and Ultrasonography for Breast Cancer Detection

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BREAST CARCINOMA is currently the most common cause of cancer death in women in most states in this country. In the past 20 years, the probability of developing breast cancer in one's lifetime has risen from 1 in 20 to 1 in 11.[1] There are three ways to attack this serious health problem: prevention, treatment, and detection.

Unfortunately, prevention is out of our grasp because we do not know the causes of breast cancer. While surgical treatment has become less mutilating over the years, the prognosis for the disease has not significantly changed, although advances have been made in adjuvant radiotherapy and chemotherapy for selected patients. Detection is the key, for several large studies have shown that the earlier a breast carcinoma is detected and treated, the better the chances of survival for the patient.[2,3]

Physical examination, while essential, is notoriously insensitive and nonspecific in the detection and evaluation of small breast tumors. A multitude of modalities have been devised to image the breast for earlier detection and improved characterization of breast masses. These include x-ray mammography, ultrasound, diaphranography, magnetic resonance imaging, CT scanning, and thermography. At present, x-ray mammography is the only imaging modality with a proven capability for detecting early, clinically occult breast carcinoma. Despite the fact that no other imaging system has been able to match mammography's ability to detect occult cancer, some of the others, in particular ultrasound, can be helpful in breast evaluation.

X-ray Mammography

There are three methods of performing mammography, all utilizing x-rays

passing through the breast to form an image on a receptor. The oldest method is plain film mammography using the same x-ray generating tubes used for other radiographic work. While the equipment is readily available in most radiology departments, this method has the disadvantage of providing relatively poor film quality at a high radiation dose to the patient.

In recent years, there have been great strides made in the development of the second method: "dedicated" x-ray mammography machines with special x-ray generating tubes and film/screen combinations that provide high resolution, high contrast images of the breast at a greatly reduced radiation dose to the patient. The third form is xeromammography, in which the x-ray image is formed, not on a film, but on an aluminum plate coated with selenium. When x-rays pass through the breast, they form a charge on the plate that eventually is converted, with a blue powder, to a specially treated paper for viewing. Xeromammography has the advantage of easy viewing with room light, and it images more of the chest wall than film/screen mammography. However, even with state-of-the-art equipment, the radiation dose to the patient is two to three times greater for xeromammography than film/screen mammography. Improvements in both forms of "dedicated" x-ray mammography (film/screen and xeromammography) have made image quality for tumor detection and characterization comparable. The choice between the two now depends largely on the preference and training of the radiologist and his referring physicians.

X-ray mammography is technically difficult. Technologists performing mammography must be specially trained and highly motivated in order to obtain optimal images with the lowest possible radiation exposure to the patient. The patient must be relatively cooperative, because good quality film/screen mammography requires vigorous compression of the breast, causing mild discomfort to the patient for the few seconds required for each exposure.

The radiologist interpreting mammography must be interested and specially trained in reading mammograms in order to insure that good examination quality is maintained and interpretations are as accurate as possible. The interpretation of mammograms can be quite difficult. While images of predominantly fatty breasts are relatively easy to read, those of breasts with a large amount of fibroglandular tissue may be extremely difficult to interpret. Fibroglandular tissue and most breast tumors have the same radiographic density so that lesion detection and characterization can be difficult or impossible in radiographically "dense" breasts. However, calcifications, which may be the only sign of clinically occult breast cancer, should be visible on good quality mammograms of any type of breast tissue. For this reason, x-ray mammography is worthwhile even in patients with known radiographically "dense" breasts or fibrocystic disease, particularly in the screening age groups.

Early Detection Is the Best Way to Increase a Breast Cancer Patient's Chances of Survival . . .

Although mammography is quite sensitive, it does not detect all cancers. In the patient with a clinically suspicious lesion, a negative mammogram does not obviate the need for further investigation or biopsy. Even in the best technical and interpretative hands, mammographic false-negative rates of 8-10%[2-4] have been reported for patients with clinically palpable breast masses. In many cases, the tumors are in radiographically "dense" breasts, or are located in areas that are poorly imaged with mammography. In asymptomatic patients with small mammographically suspicious lesions, true-positive rates for malignancy can be expected to be 10-40%.[5] This is comparable to the true-positive biopsy rates in women with palpable masses, but a carcinoma detected only by mammography is more likely to be at an earlier stage.[2]

To insure that clinically occult, mammographically suspicious lesions are removed, pre-operative localization by the radiologist is a necessity. In addition, radiography of the specimen should be done routinely to insure that small masses and suspicious calcifications are removed. A mammogram that is strongly suspicious for malignancy in a patient with a negative biopsy warrants prompt mammographic follow-up in order to be certain that a biopsy of the suspicious area has actually been obtained.

Over the past several years, great strides have been made to reduce the radiation dose to the breast from x-ray mammography. This organ is highly sensitive to radiation, particularly for women under the age of 35. For this reason, *screening* mammography is not recommended below the age of 35. The radiation dose from state-of-the-art dedicated film/screen mammographic equipment is extremely low, on the order of 0.1-0.8 rad mean glandular dose for a two-view examination. State-of-the-art xeromammographic doses are two-to-three times higher.

Data to show the effects of radiation on the breast have been drawn from populations exposed to very high levels of radiation, such as the survivors of the atomic bombing in Japan, and patients who have received radiation therapy for a variety of reasons. There are no good data to show the exact risk of inciting breast cancer from the very low level exposure of x-ray mammography. In general, the dose from good quality mammography equipment is now so low that radiation exposure should not be a deterrent to the use of mammography; the benefits far

outweigh the theoretical risks of inducing carcinoma in patients. The potential risk of a standard bilateral examination (two views per breast) is considered equivalent to traveling 100 miles by air, 15 miles by car, smoking one-fourth of a cigarette, one-third minute of mountain climbing, or being a 60-year-old man for five minutes.[6]

Breast Ultrasound

Ultrasound is a useful method of imaging the breast in selected patients. While sonograms can be done using conventional static and real-time equipment, these examinations are tedious to perform and difficult to reproduce, relegating this sort of examination to the performance of "lumpograms," primarily to determine if a palpable mass is cystic or solid. In recent years, special machines have been devised with optimum specifications for automated scanning of the breast with ultrasound. These provide relatively rapid, reproducible sonograms of the breast and allow for survey of large areas of breast tissue. Depending upon the equipment design, the patient lies on either her stomach or back and the transducer is coupled to the breast via a water bag or water tank technique. With most units, there is gentle compression of the breast which improves image quality. The automated sonographic images are displayed on a monitor and recorded on videotape or x-ray film.

Sonography is useful in several very specific instances. Its greatest utility is in the differentiation of cystic from solid breast masses, obviating the need for biopsy or needle aspiration in many patients. The ability to make small tomographic "slices" through a cyst allows the radiologist to look for small intracystic tumors. This is especially helpful for women with multiple cysts; survey sonography can determine which cysts appear suspicious and direct the biopsy or aspiration of these. In addition, for women with a large amount of fibroglandular tissue, ultrasound is frequently helpful in the detection and characterization of solid masses, an area of difficulty with x-ray mammography alone.

There are no known risks to exposure to ultrasound at the frequencies and power used with today's equipment. For this reason, it is ideal for the evaluation of very young patients and pregnant women, populations in whom x-ray mammography is of limited value and radiation exposure is undesirable. While sonography may be used as a sole imaging modality in many young, symptomatic patients,[7] it cannot be used as a substitute for x-ray mammography in women in the screening age groups. Ultrasound does not reliably display the tiny microcalcifications that may be the only sign of a potentially curable carcinoma. It is also poor for the detection of small solid masses in predominantly fatty breasts because the echo texture characteristics of many solid tumors are similar or identical to fat. While ultrasound and x-ray mammography are frequently complementary modalities, x-ray mammography remains the only proven screening method.

TABLE 1

ACS/ACR Screening Recommendations

- Monthly breast self-examination beginning at age 20.
- Yearly breast physical exam by M.D. after age 35.
- Baseline mammography between ages 35 and 40.
- Mammography every 1-2 years between ages 40 and 49.
- Yearly mammography after age 50.

Evaluation of Symptomatic Patients

For symptomatic women over the age of 30, good quality x-ray mammography is the primary imaging modality. This may be supplemented with ultrasound if the breasts are dense or if a mass requiring further characterization is found. While early reports on the use of ultrasound implied that one could easily differentiate benign from malignant solid masses, this has not proved to be the case; biopsies of all solid masses should be obtained.[8,9] The role of imaging for patients with

TABLE 2

Risk Factors for Breast Cancer

Major:

Personal history of breast cancer.
Family history of breast cancer (especially first degree relative with premenopausal breast carcinoma).

Minor:

Prolonged menstrual activity (early menarche, late menopause).
Nulliparous or over age 30 at first full-term pregnancy.
Personal history of estrogen use.
Personal history of pelvic cancer.
Caucasian.
Jewish religion by birth.
Obesity.
High dietary fat intake.
Personal history of fibrocystic disease.
Residence in Western Hemisphere or cold climate.

palpable abnormalities is twofold: first, the mammographer tries to confirm the presence of a mass and then attempts to characterize it (cystic vs. solid, etc.), and second, one must rule out the presence of additional masses within the same breast or within the opposite breast. This is important even in clinically obvious breast cancer, for multicentricity has been reported to range from 20-60%, and bilaterality ranges from 12-36%.[10] It is important to perform any breast imaging studies *before* biopsy or aspiration of clinically palpable masses because hematomas resulting from these procedures may mimic carcinoma on either mammography or sonography.

Evaluation of Asymptomatic Women

Results from the large screening programs in the Health Insurance Plan (HIP) of Greater New York study of the 1960s and the Breast Cancer Detection Demonstration Projects (BCDDP) of the late 1970s have shown that when breast cancer is detected at earlier (preferably nonpalpable) stages, there is significant improvement in the prognosis for the patient.[2,3] For this reason, the American Cancer Society and the American College of Radiology revised their screening recommendations, as shown in *Table 1*. At present, only a small percentage of American women are being screened according to these recommendations. At the least, consideration should be given to screening women at increased risk for developing breast cancer (*Table 2*). Currently, work is being done to improve the availability of screening mammography and to reduce its cost, so that all women may follow these guidelines in the future.

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MAMMOGRAPHY YIELDS FALSE-NEGATIVE, FALSE-POSITIVE RESULTS

Women with clinically suspicious breast lumps should undergo biopsies even if mammography results are negative, according to a study reported in the July 1986 issue of *Archives of Surgery*.

Jeremiah O. Young, M.D. and his colleagues studied the effectiveness of mammography in diagnosing cancer in 342 women. Dr. Young is associated with Framingham Union Hospital, Framingham, Mass., and Boston University.

"The number of women with cancer of the breast and false-negative mammogram reports ranged from 11% to 25%, depending on how equivocal mammogram reports were interpreted," the researchers say.

Mammography correctly diagnosed malignancy in 89% of cases and benign conditions in 70% of cases. The mean predictive value of a positive mammogram in women 50 years of age and older was considerably higher than in women younger than 50, the report adds.

Is 'Fibrocystic Disease' of the Breast Precancerous?

A Consensus Report from the College of American Pathologists

THE QUESTION "Is 'Fibrocystic Disease' of the Breast Precancerous?" was addressed at a consensus meeting held Oct. 3 to 5, 1985, in New York, convened by the Cancer Committee of the College of American Pathologists and funded by a grant from the American Cancer Society (CCG #241).

This meeting was the result of a series of events that began with complaints made by women throughout the country. They individually contacted the American Cancer Society because of frustration and consternation after being told that continuation of their health insurance was in jeopardy, or that their premiums would be rated higher because of a diagnosis of "fibrocystic disease." These issues were referred to the American Cancer Society's National Task Force on Breast Cancer Control. The Task Force concluded that "fibrocystic disease" is no longer an acceptable term because of the lack of specificity, and turned to the College of American Pathologists for help in clarifying the terminology used by pathologists and in the identification of premalignant lesions.

The Cancer Committee of the College of American Pathologists considered the problem and developed a proposal for a consensus meeting that was approved and funded by the American Cancer Society. The objectives of the meeting were to reach a consensus on the diagnostic terms used in surgical pathology reports of benign breast tissue, to define the terms simply and clearly to facilitate their general use, and to categorize the lesions by their relative risk for the subsequent development of invasive breast cancer.

The consensus, which is summarized below, was approved by the Board of Governors of the College of American Pathologists on Nov. 3, 1985, and adopted as policy. The participants are preparing an additional manuscript for *CA: A Cancer Journal for Clinicians* with color photomicrographs and descriptions of each of the lesions. It is clearly evident that the terminology listed in the consensus is commonly used by diagnostic pathologists. There was a general feeling among the participants, particularly the nonpathologists, that the creation of a lexicon of new terms would further obfuscate rather than solve the "fibrocystic disease" problem.

Consensus Statement

Is "fibrocystic disease" of the breast precancerous? If the pathologic diagnosis "fibrocystic disease" is used at all, or when the preferred terms "fibrocystic changes" or "fibrocystic condition" are used, the component elements should be specified.

Relative risk for invasive breast carcinoma based on pathologic examination of benign breast tissue: Women with any lesion specified below in a biopsy specimen are at **no greater risk** for invasive breast carcinoma than comparable women who have had no breast biopsy:

- Adenosis, sclerosing or florid
- Apocrine metaplasia
- Cysts, macro and/or micro
- Duct ectasia
- Fibroadenoma
- Fibrosis
- Hyperplasia, mild (more than two but not more than four epithelial cells in depth)
- Mastitis (inflammation)
- Periductal mastitis
- Squamous metaplasia

Women with any lesion specified below in a biopsy specimen are at **slightly increased risk** (1.5 to 2 times)* for invasive breast carcinoma relative to comparable women who have had no breast biopsy:

- Hyperplasia, moderate or florid, solid or papillary
- Papilloma with fibrovascular core

Women with a lesion specified below in a biopsy specimen are at **moderately increased risk** (5 times)* for invasive breast carcinoma relative to comparable women who have had no breast biopsy:

- Atypical hyperplasia (borderline lesion)
  - Ductal
  - Lobular

*Please see Explanatory Notes 4 and 5.

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Explanatory Notes and Supplements to the Consensus Statement

During the consensus development and by subsequent communication to the Chairman, it was recommended that the following explications be included with the consensus statement:

1. After a general discussion of epidemiologic risk factors for breast cancer, the participants agreed to limit the consensus statement to only those risk factors derived from the pathologic examination of benign breast tissue.

2. The indications for breast biopsy were not discussed. Nothing in this report suggests that a clinical diagnosis of "fibrocystic disease" must be followed by a biopsy to assess the risk for invasive carcinoma, in the absence of a usual indication for biopsy.

3. The use of the diagnostic term "fibrocystic *disease*" is discouraged; the terms "fibrocystic changes" or "fibrocystic condition" are preferred. However, when any of the above diagnostic terms is used, the component lesions should be specified so that the pathology consultation can be used, along with other relevant epidemiologic data, to estimate the relative risk for subsequent invasive cancer. The component lesions can be specified either in the body of the report or in the diagnosis.

4. Epithelial hyperplasias were discussed and assigned to risk categories. Ducts or ductules (lobules) with an epithelial lining no more than two cells deep are normal. *Mild hyperplasia* exists when the epithelium is greater than two but not more than four cells deep. *Moderate* and *florid hyperplasia* refer to more extensive degrees of epithelial proliferation. In the absence of atypical hyperplasia, mild hyperplasia is not associated with increased risk for invasive carcinoma. Moderate or florid hyperplasia without atypical hyperplasia is associated with slightly increased risk (1.5 to 2 times) for invasive carcinoma.

5. *Atypical hyperplasia* (ductal or lobular) as used here refers to lesions that have some features of carcinoma in situ but not enough to make an unequivocal diagnosis of carcinoma in situ—the so-called borderline lesion. While there is a moderately increased risk for invasive cancer for women with atypical hyperplasia (approximately 5 times the risk of control populations in various studies), the relative risk of lesser degrees of atypia (mild, moderate) has not yet been established. Carcinoma in situ was considered during the discussion only to establish the end point for atypical hyperplasia. Of course, women with carcinoma in situ (ductal or lobular) in a breast biopsy, who have no further treatment, are at high risk for invasive carcinoma (8 to 10 times) relative to comparable women who have had no breast biopsy.

6. It should be noted that while the consensus statement defines relative risks for invasive carcinoma, the women who are at risk for invasive carcinoma are also at risk for in situ carcinoma.

7. The *radial scar* and *the lactiferous sinus solitary papilloma* have not been included in the risk categories because of the lack of specific data. Until data are available for these entities, they should be categorized by the characteristics of their epithelial components.

Meeting Participants

The participants in the consensus meeting included:

Robert V.P. Hutter, M.D., moderator;
Jorge Albores-Saavedra, M.D.;
Elizabeth Anderson, Ph.D.;
Sue Amelia Bartow, M.D.;
Donald Bauermeister, M.D.;
Gertrud Berkowitz, Ph.D.;
Maurice M. Black, M.D.;
Harold Bowman, M.D.;
Louise Brinton, M.D.;
Edwin B. Cox, M.D.;
William D. DuPont, Ph.D.;
Clarence E. Ehrlich, M.D.;
Robert Fechner, M.D.;
Edwin R. Fisher, M.D.;
H. Stephen Gallager, M.D.;
Lawrence Garfinkel;
William H. Hartmann, M.D.;
Donald E. Henson, M.D.;
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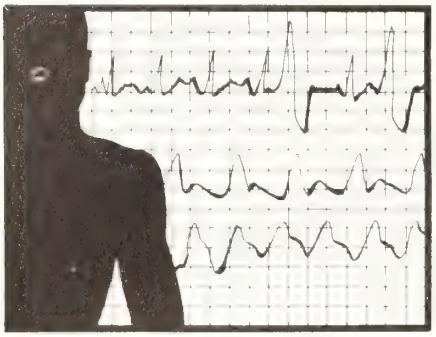
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Computer Technology in the ICU

Part 2: The Limitations and Precautions



ADULT CRITICAL CARE MEDICINE

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THE POSSIBLE advantages of incorporating a computer-based information system into the Intensive Care Unit were explored in an article in last month's issue of INDIANA MEDICINE. Modern microprocessor-based computers are unparalleled in their ability to capture, organize, manipulate, and display complex on-line, off-line, and real-time patient data. However, such systems must be carefully planned and monitored to assure that the information made available to the physician and nurse is accurate. Part 2 of this series addresses such issues and provides an overview of technologic goals in critical care at Methodist Hospital in Indianapolis.

One key limitation for information gathering in the ICU is related to manual entry of data. Most ICU personnel are not typists; thus, keyboard or keypad entry of information is cumbersome and a burden. Various approaches have been developed to address the problem. For example, a multiple layered menu selection can be used to guide function selection, and key phrase dictionaries have been developed to aid free text entry. However, none of these approaches has been successful, and manual data entry still represents a significant problem.

Data entry at remote sites such as the lab can be equally cumbersome. Even though most automated laboratory equipment, such as a blood gas machine, produces a digital output signal, it is very difficult to input that signal directly into an ICU information system. Invariably, typical data management systems require placement of data entry terminals in the lab and lab personnel must then manually enter the results directly into the ICU system.

Each computer based application should be analyzed in an effort to understand its impact and benefit. The first tenet of application analysis is that computers can support well organized and structured systems but do not improve a chaotic environment. A computer application in the ICU should supplant a functioning system, not attempt to create a new method. It should upgrade an existing process to make it operate more smoothly or efficiently. In the case of flowsheet automation, this has not happened. Invariably, an institution is forced into a pattern of operation that is new.

Many ICU based information systems attempt to automate the process of bedside charting. In the non-automated critical care environment, the usual mechanism for dealing with a large amount of information involves a flow sheet upon which nursing staff generally chart observations and physiologic values. Monitored functions are sampled periodically at appropriate time intervals and these verified data are manually recorded on the flow sheet. These forms permit rapid, visual assessment of the interrelationships of vital signs, fluid balance, respiratory function, hemodynamic function, other observations, drugs and other therapies. Generally,

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this methodology has worked well to support the care of critically ill patients, albeit at great expense in terms of the time required to complete the flow sheet. This system, if executed and managed properly, enhances prompt, accurate decisions, and lifesaving therapy.

Automated critical care information systems typically allow one to access data via menus and paged displays which can purportedly be tailored to one's specific interests. Problems noted with such systems are:

1. Data presentation is generally inferior to the flow sheet concept, since many frames or pages of data need to be accessed, thereby limiting assimilation of the information. It is essential, however, that the flow sheet be replaced. Failure to do so invariably leads to failure of the automated system, since the workload is significantly increased.

2. Hard copy output can be time-consuming if many pages are required, and the physical location of the output device is invariably not at the bedside.

3. Without appropriate cross-referencing of pertinent data, video output at the bedside is likewise difficult to assimilate. In addition, physical location of the output device in the room may limit interaction.

4. Nursing staff time can increase because of time-consuming data entry routines.

5. Applications may be so complex and cumbersome that their capabilities are never fully utilized.

6. Automated input needs to be validated (often a time-consuming procedure).

Other considerations regarding the use of large scale systems for information handling are:

1. Resource allocation is critical. The cost of the system is obvious at the outset but there can be substantial hidden costs. One fully trained systems analyst or programmer is required for general system upkeep and programming of a large data management system. Data management systems cannot be maintained via long distance.

2. Ongoing user training is essential as well as continued training for the systems analyst or programmer.

3. Hardware and software upgrades are also necessary and can be expensive. In general, one should plan to replace the system in five to seven years and rapid technological advances are continually shrinking this time period.

Even a simple application such as trending has limitations which should be recognized. Trending of physiologic measurements has been touted as a desirable quality of microprocessor based monitoring, yet many do not consider the limitations on accuracy or practicality.

Measurement errors originating in the bedside equipment result in inherent inaccuracies in the computer sampled, erroneous, on-line data. Much of the data is sampled too fast to be validated as accurate. This is an important point. The concept of continuous computer surveillance of various values such as blood pressure seems desirable. However, it must be remembered that these measurements can only be verified on an intermittent basis.

In addition to the display of measurement errors and the use of unvalidated information, as mentioned above, it is not clear that the information obtained might lead to a critical alteration in therapy. For example, does one gain benefit by having the heart rate documented every 30 seconds rather than every 15 minutes? Specific applications must be sought to solve specific problems. The application should not necessarily be provided simply because the technology makes it feasible.

Another application which is often accepted as a very useful if not essential item is arrhythmia detection. Some of the available algorithms are extremely complex and go to great lengths to recognize, categorize and store aberrant beats. They use a tremendous amount of computer power and are time-consuming with regard to alarm set-up, arrhythmia classifications and review of all that has been recorded. In the setting of the general ICU patient population, this is a waste of staff time, computing power and money.

Application Implementation

Computers address well defined problems with a rigid structure. Therefore, when anticipated applications are planned, present and future goals should be outlined. The outline should be structured in a step-wise manner. One should at least have a detailed plan with a list of requirements.

The following is an example of systems specifications for data management being considered in the Adult Intensive Care Unit at Methodist Hospital. Our concept of information handling centers around the fact that the bedside monitor must be a workstation on a network. We support a distributed concept. Using this approach, the bedside may be interfaced to other networks, computers or devices, thus promoting automatic data acquisition. The bedside unit must also be capable of operating independently for custom bedside applications. This will also allow customized user interaction. In general, keyboard data entry by nursing staff is to be avoided.

The contribution of this arrangement to patient care should be:

1. Easy acquisition of data from the bedside and from other systems or devices.

2. Presentation of data at the bedside and/or at a remote site.

3. A general acceleration of the availability of some data.

4. Consistent organization and presentation with greater ease of correlation but no decrease in ease of assimilation.

Information handling applications can be divided into two subgroups. The first includes information generated within the local network, that is, within the ICU. The second subgroup concerns information generated outside of

the ICU, such as diagnostic or therapeutic test results.

The following local applications are proposed to operate within the monitor network. These would reside in the bedside workstation or in a central location which would also provide the storage capacity for the patient database. These applications would be accessed at the bedside through the monitor workstation. It is strongly felt that the monitor should serve as the bedside workstation. Applications are:

1. General numeric calculations.
2. Specific calculation programs for hemodynamic data, drug infusion rates, hyperalimentation, renal and pulmonary data.
3. Patient care plans.
4. Standards of care.
5. Drug compatibility information.
6. General drug reference information.
7. Automated charting with validation of on-line data and automated input from bedside devices.
8. Arrhythmia detection; this refers to practical recognition of life-threatening rhythm disturbances as is appropriate to an ICU. It does not include detailed archiving and classification of arrhythmias.

Applications involving other hospital areas would largely focus on retrieval of diagnostic test results. This implies information sharing between networks or systems. Automatic use of remotely gathered information, such as entry of blood gas values and hemoglobin, into the hemodynamic calculations would eliminate manual entry of these values. Also, much information which could be entered at the bedside has useful management implications. For example, more detailed knowledge of bed utilization, patient demographics and patient acuity could lead to appropriate staff management policies. The key concept remains, however, that for any of these broad applications, one must first have a functioning and accepted local information network, which positively contributes to the quality of patient care.

Conclusion

The information load in critical care areas is so large that computers are recognized as the only practical method for comprehensive, efficient data handling. Presently, comprehensive data management systems are unacceptable to many institutions for a variety of reasons. It is reasonable to predict that comprehensive systems will be available in the future and will incorporate network technology to link the critical care areas to other information systems in the hospital.

We are presently in a transition period and we must realize that there are a multitude of potential applications for computers in the ICU. It is the responsibility of those engaged in the care of critically ill patients to dictate the development of beneficial applications, which can be assimilated into an eventual data management system. Without close circumspection and initiative, a myriad of technological applications will emerge without a commensurate increase in level of care, productivity or cost effectiveness.

Resident Physician Essay Contest

During the 1986-87 resident training year the Resident Medical Society of the ISMA and INDIANA MEDICINE will conduct a medical essay contest. All members of the Resident Medical Society are eligible to enter. Each author may choose the subject. Essays (medical articles) will be limited in length to 10 pages of typescript, properly margined and double spaced. Illustrations are encouraged and are to be included in the space limitation. Each article submitted should not have been published previously and should be credited to one author only.

Entries should be mailed to INDIANA MEDICINE, 3935 N. Meridian St., Indianapolis 46208, and be postmarked prior to Jan. 1, 1987.

Judges will consist of two specialists within the field of the article, three medical education directors from Indiana institutions with approved residency training programs, and one member of the INDIANA MEDICINE Editorial Board.

Authors of the articles judged to be the four best will receive prizes of $100 each, and an additional $100 prize will be given to the best article of the four.

All prize-winning articles will be published in INDIANA MEDICINE. It is hoped that space will allow the publication of other entries to be chosen in the order of their numerical scores.

Essays will be judged on the following criteria:

SCIENTIFIC MERIT: Research methods, data analysis, subject or patient population selection, control of variables, literature analysis.

APPLICABILITY: Usefulness of results to private practitioner, academician, researcher.

CONTENT: Depth of analysis, continuity of discussion supporting the main thesis, feasibility of conclusions.

INNOVATION: Uniqueness of idea, creativity, improvement of existing techniques, previously undiscovered data, advancement of basic understanding.

Each essay will be assigned a numerical score for each of the four judging criteria by each judge as follows:

0 Unacceptable	3 Good
1 Poor	4 Above average
2 Fair	5 Excellent

Pediatric Osteogenic Sarcoma: Recent Trends

Resident Medical Society Award-Winning Essay

Second Prize Winner, Resident Medical Society Essay Contest

SILVIO A. GARCIA, M.D.
Indianapolis

OSTEOGENIC SARCOMAS are the most common primary bone tumors encountered in the first and second decades of life. Prior to the use of chemotherapy, several large reviews reported a cure rate of approximately 15-20% with surgery alone.

Although osteogenic sarcoma is a distinctly rare disease in itself, its proper treatment has been the topic of much discussion during the past 15 years. This study reviews the recent and current treatment policies at Indiana University Medical Center using preoperative chemotherapy versus no preoperative chemotherapy. Thirty-five patients received chemotherapy preoperatively, or postoperatively only, or both pre- and postoperatively, or chemotherapy without surgical intervention for the treatment of osteosarcoma at Indiana University Medical Center from 1970 to 1985.

In 1970, the treatment policy for non-metastatic osteogenic sarcoma in the pediatric population consisted of ablative surgery and postoperative chemotherapy. This policy was continued through 1979. These patients received many different single agent and combined chemotherapeutic regimens. Patients treated before 1974 received varying doses of Vincristine, Cyclophosphamide, Actinomycin D and Cytoxan. By mid-1974, Adriamycin, Bleomycin and High-Dose Methotrexte with Citrovorum Factor Rescue was introduced to adjuvant chemotherapy.

Starting in 1980, patients began receiving preoperative chemotherapy, surgical ablation (amputation) and postoperative chemotherapy as shown in *Figure 1*. Patients received five courses of preoperative chemotherapy in the doses shown in *Table 1*, with special care given to the maximum doses and the chronological administration of the Citrovorum Factor Rescue.

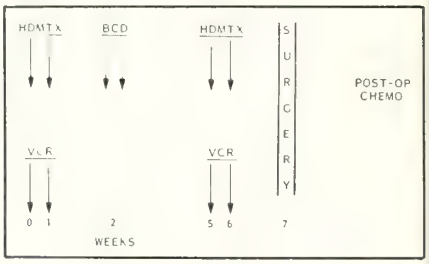


FIGURE 1

Throughout this time span, only four patients presented with widespread metastatic disease, which made them non-surgical candidates and thus they received chemotherapy only. These patients were treated with varying doses of Methotrexate, Vincristine, Adriamycin, Bleomycin, Cytoxan and Actinomycin D.

TABLE 1
Preoperative Chemotherapy Doses

VCR - VINCRISTINE 1.5 mg/m^2 (max 2.0 gm)

HDMTX - HIGH DOSE METHOTREXATE

12 gms/m^2 patients $\leq$ 12 yrs. of age (max 18 gms)
8 gms/m^2 patients $>$12 yrs of age

BCD-

B - BLEOMYCIN - 15 mg (units)/m^2 daily
C - CYCLOPHOSPHAMIDE - 600 mg/m^2 daily
D - DACTINOMYCIN - 600 mcg/m^2 daily (max 1250 mcg)

CITROVORUM FACTOR - 15 mg po q 6h x 12 doses starting 24 hrs from the beginning of MTX infusion

Dr. Garcia, Dept. of Radiation Oncology, Indiana University School of Medicine, prepared this article for the 1985-86 medical essay contest sponsored by the Resident Medical Society of the Indiana State Medical Association and by INDIANA MEDICINE. The article was picked by the judges for second prize.

In summary, a total of 35 pediatric patients were seen from 1970-1985. Twelve received pre- and postoperative chemotherapy, 19 received postoperative chemotherapy, and four patients underwent no surgery, receiving chemotherapy alone.

The sites of primary tumor are demonstrated in *Figure 2*, with the femur being the most frequent site encountered followed by tibial primaries.

The number of evaluable patients on adjuvant chemotherapy is 12 for the pre- and postoperative chemotherapy group; 17 for the postoperative chemotherapy group with two patients refusing chemotherapy after only two courses and four in the no surgery group.

Five patients who received pre- and postoperative chemotherapy developed pulmonary metastases. Four underwent one or more thoracotomies with one patient presently alive and without evidence of disease. Fourteen of 19 who received postoperative chemotherapy developed pulmonary metastases. All 14 underwent one or more thoracotomies and four patients are presently alive with no evidence of disease.

All of the non-surgical candidates presented with widespread metastases. Of the group receiving pre- and postoperative chemotherapy, 8/12 are alive and disease-free, yielding a survival of 67% with a median follow-up of 19 months and range of five to 61 months.

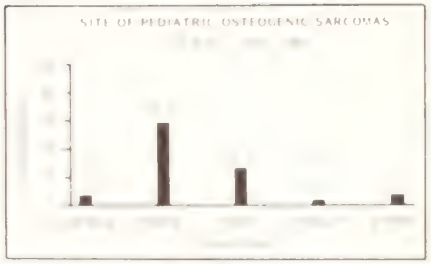


FIGURE 2

In the group that received postoperative chemotherapy only, 7/19 are alive and free of disease, yielding a survival of 37% with a median follow-up of 22 months and a range of 6-178 months.

The group with widespread metastatic disease that received no surgery has no survivors, with a median follow up of 14.5 months and a range of 6-23 months, as shown in *Table 2*.

Of the 12 patients receiving pre- and postoperative chemotherapy, three patients experienced a grade IV tumor response of the surgical specimen, which is no viable tumor in extensive sampling with at least a full cross section of the tumor. Two experienced grade III tumor response, which represents only scattered foci of viable tumor seen in less than 5% of the tumor. Two experienced grade IIB responses, which are 5-50% viable tumor remaining. Three patients experienced grade IIA tumor response, which show more than 50% of viable tumor left, and two patients had grade I ratings, which represent no tumor response to chemotherapy identified in the surgical specimen (*Table 3*).

Eight patients were treated at the Department of Radiation Oncology for palliation of pain at various sites for metastatic disease with good symptomatic response although the radiation therapy was not considered to have significantly prolonged survival. The complications encountered during

TABLE 2

Treatment	Total number of patients	Patients with pulmonary metastases	Patients alive	Disease-free patients (%)	Median follow-up (months)
Pre-operative & Post-operative Chemotherapy	12	5	8	67	19
No Pre-operative Chemotherapy	19	14	7	37	22
No Surgery Chemotherapy Only	4	4	0	0	14

TABLE 3

Tumor Response to Pre-Op Chemotherapy

Grade I - 2
Grade II_A - 3
Grade II_B - 2
Grade III - 2
Grade IV - 3

Huvos Grading System

Grade I - tumor not responding to therapy. No effect identified

Grade II_A - more than 50% viable tumor left

Grade II_B - 5-50% viable tumor remaining

Grade III - only scattered foci of viable tumor seen (less than 5% of tumor)

Grade IV - no viable tumor seen in extensive sample (at least a full cross section of the tumor)

and after the treatment are shown in *Table 4* and most are considered reasonable when weighed against the increase in survival benefits. All complications listed were ones interferring with treatment or requiring therapeutic measures, with neutropenia and renal impairment being the most common.

This review, along with historical experience, shows ablative surgery continues to be a necessity in the treatment of osteogenic sarcoma, with adjuvant chemotherapy significantly increasing long-term disease-free survival. As shown in *Figure 3*, pre- and postoperative chemotherapy has

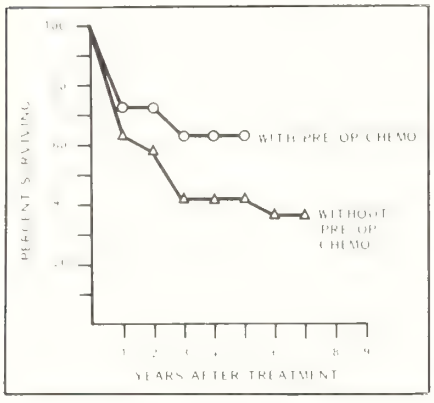


FIGURE 3

a significant survival advantage over postoperative chemotherapy only regimens. This shows survival curves calculated with the actuarial (life-table) method of percent surviving from first treatment to end of year against years after treatment. The five-year survival for patients receiving pre- and post-

TABLE 4
Complications

Anemia	1
Diarrhea	1
Gastroenteritis	1
Hematuria	1
A-V fistula R upper extremity	1
Neutropenia	5
Phantom pain	2
Hepatic toxicity	2
Nausea and Vomiting	2
Renal Impairment	5
Radiation Esophagitis	1
Radiation Pneumonitis	1
Osteomyelitis	1
Stump breakdown with protrusion of femur	2

operative chemotherapy is 63%. For the group receiving postoperative chemotherapy, five-year survival is 42%.

In an effort to compare the life tables calculated to obtain these curves, a null hypothesis was derived that there was no significant difference between the survival rates in the two groups.

The hypothesis was tested at the 0.05 level of significance.

A "z" test was conducted and z = 9.9. Since this is outside the range of −1.96 to 1.96, the 0.05 level of significance, the null hypothesis was rejected.

Since the "z" test is ordinarily used for larger samples, a log rank test was also calculated. The tabled critical value of chi square (X^2) for one degree of freedom, the 0.05 level is 3.84. The log rank comparison produced a X^2 of 2.25. Since this exceeded the tabled critical value, the null hypothesis was once again rejected, supporting the fact that the difference between the two curves is statistically significant.

Table 5 indicates various rates of survival. The death rate for Group A is

TABLE 5

	Group A	Group B
Death Rate	$^{4}/_{12} = .33$	$^{12}/_{19} = .63$
Survival Rate	.67	.37
Difference of Death Rates	.63-.33 = .30	
Relative Risk	$^{.63}/_{.33} = 1.91$	
Odds Ratio	$\frac{.63}{.37} = 3.46$	
	$^{.33}/_{.67}$	

0.33 and for Group B 0.63. The survival for Group A is thus 0.67 and for Group B 0.37 with a difference in death rates of 0.30. The relative risk indicates that the patients in Group B were at almost twice as much risk of dying as were the patients in Group A. The odds ratio tells us that the odds are 3.46 to 1 that subjects in Group B will die compared to Group A.

Our current recommendations at Indiana University Medical Center for non-metastatic osteogenic sarcoma of the extremity in the pediatric population include preoperative chemotherapy (High-Dose Methotrexate, Vincristine, Bleomycin, Cytoxan and Actinomycin D) and definitive surgery. With subsequent postoperative chemotherapy, the agents used postoperatively depend on the histologic response of the tumor to the preoperative chemotherapy.

The use of thoracotomy for isolated pulmonary metastasis has shown to yield curative results in a significant percent of patients, and finally, radiation therapy offers consistently good control of painful, unresponsive lesions.

Primary Squamous Cell Carcinoma of the Thyroid

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SHOU-GEM LIN, M.D.[2]

Abstract

Primary squamous cell carcinoma of the thyroid is extremely rare, and estimated to be less than 1% of all primary malignant tumors of the thyroid. A case of primary squamous cell carcinoma of the thyroid is reported in a 65-year-old man who had a long history of goiter. The literature is briefly reviewed. It is suggested that squamous cell carcinoma of the thyroid may arise from squamous metaplasia of the follicular epithelium following chronic thyroid diseases. The tumor is radioresistant and has a very poor prognosis.

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PRIMARY SQUAMOUS cell carcinoma of the thyroid is extremely rare, and represents less than 1% of all primary malignant tumors of the thyroid. Approximately 50 cases are reported in the world literature.[1-4] The following is a case report of primary squamous cell carcinoma of the thyroid with a brief clinical discussion and review of the literature.

Case Report

A 65-year-old man had a history of goiter for about 20 years. He noticed a recent enlargement of the thyroid with difficulty of breathing, swallowing and hoarseness. An x-ray of the neck with barium swallowing showed deviation of the trachea and compression of the esophagus by a markedly enlarged thyroid with focal calcification (*Fig. 1*). A total thyroidectomy was performed.

The entire thyroid measured 8.5x7.0x5.0 cm. The external surface was irregular and stony hard. Cut surface revealed irregular areas of grayish white parenchyma with focal areas of calcification and cystic spaces (*Fig. 2*). Microscopically, there was marked chronic lymphocytic thyroiditis with irregular bundles of interlacing fibrous tissue and focal calcification. Nests of dysplastic squamous epithelium were present, infiltrating the fibrous stroma (*Fig. 3 and 4*). The tumor cells were positive for cytokeratin, negative for thyroglobulin immunoperoxidase. Tonofilaments were also present in the cytoplasm of the tumor cells.

Discussion

The histogenesis of the squamous cell carcinoma of the thyroid is unclear. It is suggested that squamous epithelium may derive from the ultimobranchial bodies or metaplasia of the follicular epithelium in chronic thyroid diseases such as Riedel's struma, adenomatous goiter, chronic lymphocytic thyroiditis or various other conditions.[5-7] Squamous cell carcinoma of the thyroid may arise from malignant transformation of the squamous metaplasia of the follicular epithelium.[8-9] Cases of mixed squamous cell carcinoma and papillary adenocarcinoma have been reported.[10-14]

In the present case, there are tonofilaments in the cytoplasm of the tumor cells. The tumor cells are positive for cytokeratin, negative for thyroglobulin immunoperoxidase. These findings indicate that squamous cell carcinoma of the thyroid does not retain morphologic or functional properties of the thyroid follicular cells.[15]

Squamous cell carcinoma of the thyroid characteristically occurs in older persons who have a long history of goiter or other chronic thyroid diseases.[3,4] The tumor is radioresistant and has a rapidly progressive clinical course.[1-4,8]

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FIGURE 1: Lateral view of the neck x-ray shows a large thyroid (large arrowheads) compressing the esophagus (small arrowheads). Notice also focal areas of calcifications in the thyroid.

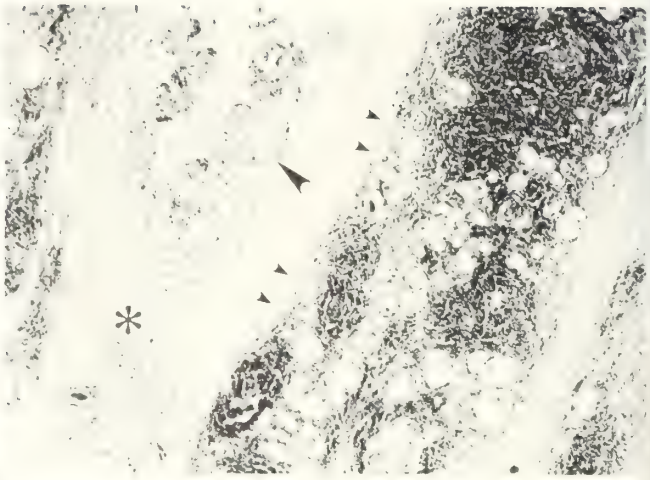


FIGURE 3: Low power view shows chronic lymphocytic thyroiditis (small arrowheads) separated by broad bands of fibrous tissue (asterisk). Nests of squamous cell carcinoma (large arrowheads) within the fibrous stroma. (H&E stain, X40).

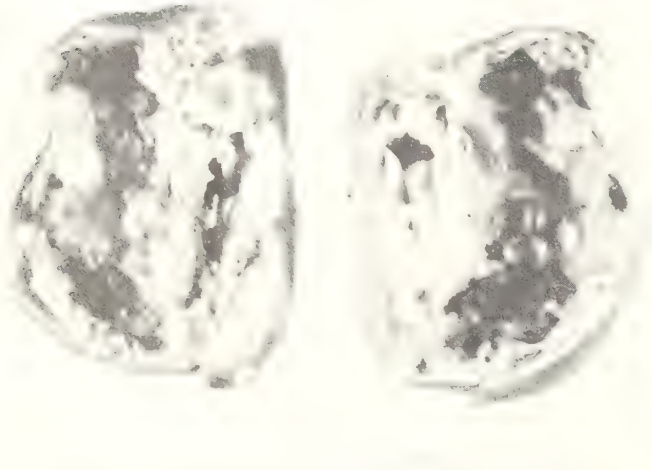


FIGURE 2: Cut surface of the thyroid shows irregular areas of grayish white parenchyma and cystic spaces.

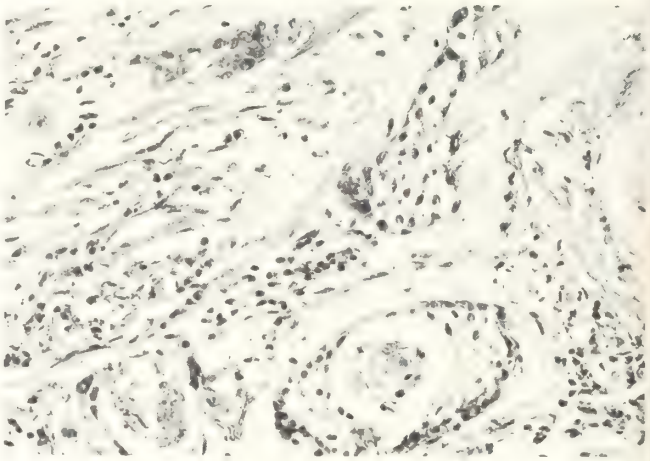


FIGURE 4: High power view shows irregular nests of squamous cell carcinoma infiltrating the fibrous stroma. (H&E stain, X400).

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CARDIZEM is contraindicated in (1) patients with sick sinus syndrome except in the presence of a functioning ventricular pacemaker, (2) patients with second- or third-degree AV block except in the presence of a functioning ventricular pacemaker, and (3) patients with hypotension (less than 90 mm Hg systolic)
WARNINGS

1. **Cardiac Conduction.** CARDIZEM prolongs AV node refractory periods without significantly prolonging sinus node recovery time, except in patients with sick sinus syndrome. This effect may rarely result in abnormally slow heart rates (particularly in patients with sick sinus syndrome) or second- or third-degree AV block (six of 1,243 patients for 0.48%). Concomitant use of diltiazem with beta-blockers or digitalis may result in additive effects on cardiac conduction. A patient with Prinzmetal's angina developed periods of asystole (2 to 5 seconds) after a single dose of 60 mg of diltiazem
2. **Congestive Heart Failure.** Although diltiazem has a negative inotropic effect in isolated animal tissue preparations, hemodynamic studies in humans with normal ventricular function have not shown a reduction in cardiac index nor consistent negative effects on contractility (dp/dt).
   Experience with the use of CARDIZEM alone or in combination with beta-blockers in patients with impaired ventricular function is very limited. Caution should be exercised when using the drug in such patients
3. **Hypotension.** Decreases in blood pressure associated with CARDIZEM therapy may occasionally result in symptomatic hypotension
4. **Acute Hepatic Injury.** In rare instances, significant elevations in enzymes such as alkaline phosphatase, CPK, LDH, SGOT, SGPT, and other symptoms consistent with acute hepatic injury have been noted. These reactions have been reversible upon discontinuation of drug therapy. The relationship to CARDIZEM is uncertain in most cases, but probable in some. (See PRECAUTIONS.)

PRECAUTIONS
General. CARDIZEM (diltiazem hydrochloride) is extensively metabolized by the liver and excreted by the kidneys and in bile. As with any new drug given over prolonged periods, laboratory parameters should be monitored at regular intervals. The drug should be used with caution in patients with impaired renal or hepatic function. In subacute and chronic dog and rat studies designed to produce toxicity, high doses of diltiazem were associated with hepatic damage. In special subacute hepatic studies, oral doses of 125 mg/kg and higher in rats were associated with histological changes in the liver which were reversible when the drug was discontinued. In dogs, doses of 20 mg/kg were also associated with hepatic changes; however, these changes were reversible with continued dosing

Drug Interaction. Pharmacologic studies indicate that there may be additive effects in prolonging AV conduction when using beta-blockers or digitalis concomitantly with CARDIZEM. (See WARNINGS.)

Controlled and uncontrolled domestic studies suggest that concomitant use of CARDIZEM and beta-blockers or digitalis is usually well tolerated. Available data are not sufficient, however, to predict the effects of concomitant treatment, particularly in patients with left ventricular dysfunction or cardiac conduction abnormalities. In healthy volunteers, diltiazem has been shown to increase serum digoxin levels up to 20%.

Carcinogenesis, Mutagenesis, Impairment of Fertility. A 24-month study in rats and a 21-month study in mice showed no evidence of carcinogenicity. There was also no mutagenic response in in vitro bacterial tests. No intrinsic effect on fertility was observed in rats.

Pregnancy. Category C. Reproduction studies have been conducted in mice, rats, and rabbits. Administration of doses ranging from five to ten times greater (on a mg/kg basis) than the daily recommended therapeutic dose has resulted in embryo and fetal lethality. These doses, in some studies, have been reported to cause skeletal abnormalities. In the perinatal/postnatal studies, there was some reduction in early individual pup weights and survival rates. There was an increased incidence of stillbirths at doses of 20 times the human dose or greater.

There are no well-controlled studies in pregnant women, therefore, use CARDIZEM in pregnant women only if the potential benefit justifies the potential risk to the fetus

Nursing Mothers. Diltiazem is excreted in human milk. One report suggests that concentrations in breast milk may approximate serum levels. If use of CARDIZEM is deemed essential, an alternative method of infant feeding should be instituted

Pediatric Use. Safety and effectiveness in children have not been established

ADVERSE REACTIONS
Serious adverse reactions have been rare in studies carried out to date, but it should be recognized that patients with impaired ventricular function and cardiac conduction abnormalities have usually been excluded.

In domestic placebo-controlled trials, the incidence of adverse reactions reported during CARDIZEM therapy was not greater than that reported during placebo therapy.

The following represent occurrences observed in clinical studies which can be at least reasonably associated with the pharmacology of calcium influx inhibition. In many cases, the relationship to CARDIZEM has not been established. The most common occurrences as well as their frequency of presentation are: edema (2.4%), headache (2.1%), nausea (1.9%), dizziness (1.5%), rash (1.3%), asthenia (1.2%). In addition, the following events were reported infrequently (less than 1%).

Cardiovascular	Angina, arrhythmia, AV block (first degree), AV block (second or third degree — see conduction warning), bradycardia, congestive heart failure, flushing, hypotension, palpitations, syncope
Nervous System:	Amnesia, gait abnormality, hallucinations, insomnia, nervousness, paresthesia, personality change, somnolence, tinnitus, tremor.
Gastrointestinal	Anorexia, constipation, diarrhea, dysgeusia, dyspepsia, mild elevations of alkaline phosphatase, SGOT, SGPT, and LDH (see hepatic warnings), vomiting, weight increase
Dermatologic:	Petechiae, pruritus, photosensitivity, urticaria
Other:	Amblyopia, dyspnea, epistaxis, eye irritation, hyperglycemia, nasal congestion, nocturia, osteoarticular pain, polyuria, sexual difficulties.

The following postmarketing events have been reported infrequently in patients receiving CARDIZEM: alopecia, gingival hyperplasia, erythema multiforme, and leukopenia. However, a definitive cause and effect between these events and CARDIZEM therapy is yet to be established. Issued 11/85

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Cancer of the Lung in Central Indiana

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Indianapolis

IN 1985 IT WAS estimated that 144,000 new cases of lung cancer would be diagnosed in the United States with 125,000 deaths from that disease. In Indiana the estimate was for 3,600 cases with 3,200 deaths. Lung cancer surpassed cancer of the prostate in the late 1950s, cancer of the colon in 1963 and cancer of the breast in 1966 as the leading cause of cancer death. In 1985 cancer of the lung was responsible for more deaths in women than cancer of the breast for the first time.[1]

Over the last several years in the private practice of medical oncology it has become apparent that the pattern of lung cancer has changed rather dramatically. Twenty years ago, when clinical oncology was a relatively new specialty and the only treatment available for lung cancer was surgery or irradiation, it was unusual to see a female patient with lung cancer. Today almost equal numbers of male and female patients are being diagnosed with lung cancer. Furthermore, there is an increasing number of squamous cell and small cell carcinomas in women.

This study was undertaken to evaluate the patterns of lung cancer as seen in the private practice of clinical oncology in central Indiana. The cases included in this study represent consecutive patients personally seen by the author for initial evaluation in which the diagnosis of bronchogenic carcinoma was established by tissue biopsy from thoracotomy, bronchoscopy, mediastinoscopy or needle biopsy of the primary site or of metastatic deposit between Jan. 1, 1985 and Dec. 31, 1985. All patients were evaluated by age, sex, predominant histological cell type, smoking history and survival. The patients were referred from primary care physicians, surgeons, thoracic surgeons and other specialists, and personally seen by the author for initial evaluation and therapeutic management.

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Results

A total of 64 cases of lung cancer were seen primarily from central Indiana, of which 51.6% were male and 48.4% female. The age range was 39 to 81 years, with an age distribution characteristic of lung cancer peaking in the 70s, as seen in *Figure 1*. A similar age distribution pattern was seen for both sexes. The average age at the time of diagnosis was 61.45 for the entire population, 61.4 for the males and 61.5 for the females.

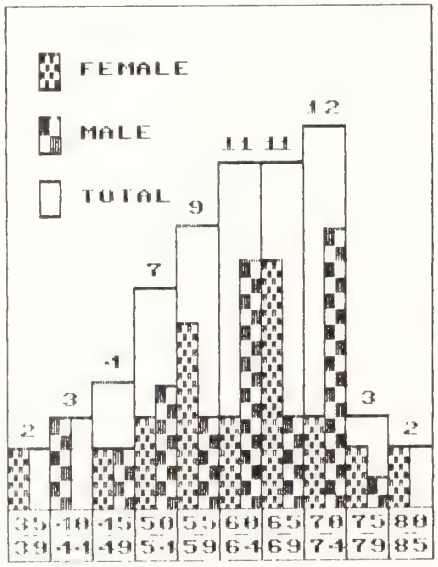


FIGURE 1: Lung cancer incidence by age and sex.

Cell Type by Sex

The histological cell type by sex was found to be similar in the two sexes, as seen in *Figure 2*, with a slight predominance of adenocarcinoma in the female population and nearly even distribution of the three major cell types in males and the entire population. This differs from the cell distribution by sex as reported in the older medical literature but is consistent with the trends reported in the more recent literature.[2,3,4]

Cell Type by Age

Study of the histological cell type by age is shown in *Figure 3* and reveals some interesting observations. The mean ages for the major cell types were 58.4 years for the small cell type, 61.3 for adenocarcinoma and 65.2 for squamous cell carcinoma. No case of squamous cell carcinoma was seen below the age of 50 years in this series. The percentage of small cell carcinomas diagnosed in each age group declined from 43 to 29.4 to 22.7 to 20 as the age groups increased by intervals of 10 years. The age groups below 40 years and over 80 years were excluded from the graph as each group contained only two patients, which was not felt to be enough for cell type evaluation.

Smoking History

All of the cases except two had a smoking history of 20 pack-years or more for a 96.9% association. The two

patients without smoking history are worthy of mention. The first one was a 39-year-old woman with an adenocarcinoma of the lung diagnosed by thoracotomy who had never smoked. She had lived with her husband for 19 years who had smoked three to four packs of cigarettes a day for that period of time and had died of a massive coronary occlusion. The second case was an 81-year-old woman with squamous cell carcinoma of the lung established by needle biopsy and later confirmed by thoracotomy who had a 35+ year heavy exposure to asbestos in an industrial setting. She described the area in which she worked as being like "snow in the air" most of the time during her exposure. In view of the fact that the first case was exposed heavily to tobacco carcinogens from "passive smoking" in the home environment, we feel that 63 of the 64 cases or 98.4% of the cases in this series were smoking related. Several other studies in the literature confirm the association between "passive smoking" and increased occurrence of cancer of the lung.[5-9]

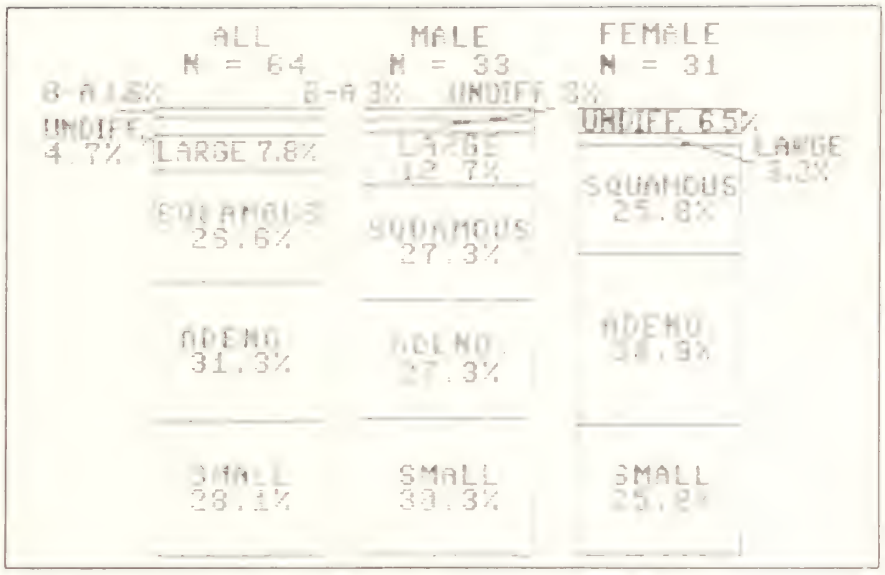


FIGURE 2: Cell type distribution by sex.

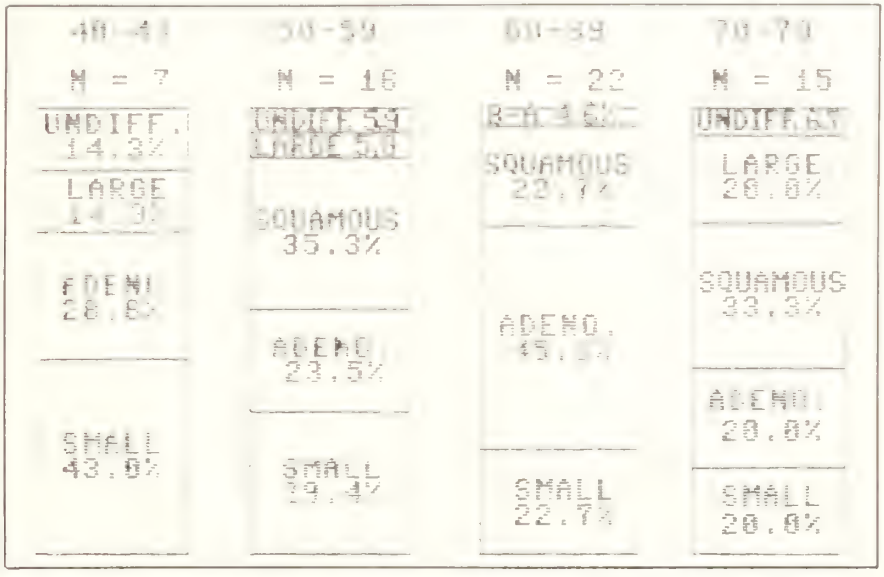


FIGURE 3: Distribution of cell type by age groups.

Mortality

The length of follow-up in this study ranged from 14 to 363 days, with a mean of 197.1 days. At the completion of the study 27 patients had died, 33 were known to be living and the status of four patients is not known. The overall known mortality was 42.2%. In the population of 40 patients who were followed for 180 days or longer, 21 were known to have died and 19 were known to be alive for a mortality of 52.5%. Eighteen of 22 patients followed from 270 to 363 days were known to be dead for a mortality of 81.8%.

Most of the patients in the study had metastatic disease at the time of diagnosis and were treated with irradiation, chemotherapy or both.

The mortality of the men was 48.5% and the mortality of the women was 35.5% in spite of a nearly equal age at the time of diagnosis.

The mortality by age groups is shown in *Table 1*.

The mortality by histological cell type is shown in *Table 2*.

Discussion

The incidence of cancer of the lung has increased at a rate of about 10% per year since about 1930[10] but the pattern has not been the same in the two sexes. From 1930 until about 1965, lung cancer was mostly a disease of men, but from the mid-1960s until now there has been a steep increase in incidence in women as well. Both of the patterns of occurrence of lung cancer have followed the pattern of smoking habits by 20 years. Recent results from the National Cancer Institute[10] indicate a slowing of the increase of lung cancer rates in white men from 1973 to 1977

TABLE 1
Mortality by Age Groups

Age Group	*No. of Pts.*	*Mortality*
30 to 39	2	00.0%
40 to 49	7	42.9%
50 to 59	16	43.8%
60 to 69	22	42.8%
70 to 79	15	40.0%
80 to 89	2	100.0%

TABLE 2
Mortality by Histological Cell Type

Histological Cell Type	*No. of Pts.*	*Mortality*
Squamous Cell CA	17	52.9%
Small Cell Carcinoma	18	38.0%
Adenocarcinoma	20	30.0%
Large Cell Carcinoma	5	60.0%
Undifferentiated CA	3	33.3%
Broncheo-Alveolar CA	1	100.0%

to 2.5% annually. The increase from 1978 to 1982 was only 0.6%. These changes, which appear to be ongoing, have resulted in a change in the patterns of cancer of the lung seen in the practice of medical oncology. Historically, the pattern of histological cell type seen in men has been predominantly squamous cell whereas women have had mostly adenocarcinomas. In a recent textbook on tumors of the lung, 70 different types of tumors are described[11] but for practical purposes lung cancers are generally divided into six major types: Small Cell, Squamous Cell, Adenocarcinoma, Large Cell, Undifferentiated and Broncheo-Alveolar.

In 1977 Vincent, *et al.*[2] described a change in the pattern of cell types in both men and women. He described a decreasing incidence of squamous cell tumors in men with an increase in adenocarcinomas from 1962 to 1975. During the same period he described an increase in adenocarcinomas in women. In his series the percentage of women with lung cancer increased from 9.5 in 1962 to 21.3 in 1975.

In a series of 1,539 lung cancer patients reported in 1985 by Chute[3] the percentage of women was 20.7 from 1973 to 1976. In 1983 Zisholtz and Eisenberg[6] reported a series of 51 patients with lung cancer diagnosed by bronchoscopy in which he found 29.4% females. From 1973 to 1983, incidence and mortality rates of lung cancer in women have increased about 6% per year[10] resulting in a further change in the ratio of males to females to nearly 1:1. The ratio in our series was found to be 1.1:1 with 33 men and 31 women. Even though our series is small, we have no reason to believe that it is not a representative sample of lung cancer in central Indiana. The age distribution and cell type are characteristic of larger populations of lung cancer reported in the literature.

The histological cell types by sex which we observed are consistent with continuation of the trend reported by Vincent and has resulted in a pattern of nearly equal numbers of small cell, squamous cell and adenocarcinoma in men and slight predominance of adenocarcinoma in women. In females one would expect an increase in small cell and squamous cell types, which are felt to be more strongly associated with cigarette smoking than adenocarcinoma, as the overall rise in lung cancer in women is felt to be due to increased smoking in that population. This is the pattern observed in our female population with a little over one-fourth of the cases each being of the squamous and small cell type and nearly 40% of the cases being adenocarcinoma.

There is no significant body of literature of histological cell type by age, but observations are that small cell carcinomas are seen more in younger individuals and squamous cell carcinomas in older individuals. Our observations certainly are consistent with this. The three other cell types are present in too small numbers to draw any conclusions concerning age trends.

The smoking history needs little comment. Our results are consistent with those of Weiss[12] in a 10-year prospective study of 6,136 men in 1975, and that of Auerbach[13] in a study of 662 autopsies in 1975 which showed little correlation between smoking history and cell type. All but two of our cases had a smoking history of 20 pack-years or more. The association of passive smoking with increased incidence of lung carcinomas as seen in one of our non-smokers has been reported by Hirayama,[5] Trichopoulous,[6] Garfinkle,[7] Enstrom,[8] Correa,[9] and others. The association of asbestos with squamous cell carcinoma as seen in our other non-smoking patient is not unexpected. As pointed out by Churg[14] in a review of 471 cases, there is no predominant cell type of lung cancer associated with asbestos exposure as previously thought.

The mortality statistics are not unexpected and were generally related to performance status. Most of the patients were either non-operable, or if operated, not completely resected because of metastatic disease. The patients with obvious metastases were treated with irradiation, chemotherapy or both; those with early stage disease completely resected were observed only. Our mortality rate compares about equally with a recent report by Ruckdeschel, *et al*[15] of 486 patients with metastatic non-small cell carcinoma of the lung in which the median survival ranged from 22 to 26.6 weeks. The differences in mortality by age group is minimal and again probably reflects an equal distribution in patients with good performance status except in the age

group over 80 years. The mortality by cell type shows an increased mortality in the squamous cell type which seems to occur in the older age group. Untreated, small cell carcinoma is much more aggressive and rapidly fatal but is the most sensitive to therapy. The other cell types are generally much slower in their growth rates but likewise are less sensitive to therapy. This likely explains the small differences in mortality between the major cell types in this series.

Lung cancer as seen by the private medical oncologist in central Indiana shows a changing pattern of marked increase in both the number and percentage of women. It is almost totally smoking-related, with a changing histological cell pattern previously observed in other series. The mortality rate is quite high. Even though the therapeutic modalities of surgery, irradiation and chemotherapy are available, only those cases which are in early stages with a good performance status can be expected to have a favorable outcome. Lung cancer is rarely detected early. To date, screening programs, including sputum cytology and frequent chest x-rays, have been ineffective in improving the detection rate. The five-year survival for cancer of the lung varies from 6 to 13%[16] and has not improved significantly in the last 15 to 20 years. In view of these facts, it is apparent, as pointed out by the author in a previous paper,[17] that the only approach to the control of lung cancer is to reduce cigarette smoking in the general population. We feel that this is a responsibility of the medical profession.

Summary

Cancer of the lung is the leading cause of cancer death in the United States today. This study reports a one-year experience with lung cancer in central Indiana as seen by a medical oncologist in private practice. A total of 64 newly diagnosed cases were seen, which were 51.6% male and 48.4% female. They ranged in age from 39 to 81 years with an average age at the time of diagnosis of 61.45 years.

Study of the cell type by age showed small cell carcinoma to be more prevalent in the younger population and decreased in incidence with advancing age, whereas squamous cell carcinoma was not seen in the younger age groups but increased in incidence in the older population. Adenocarcinomas were fairly uniform by age.

The average age at the time of diagnosis for the cell types were: small cell carcinoma, 58.4 years; adenocarcinoma, 61.3 years; and squamous cell carcinoma, 65.2 years. The three main histological cell types were nearly evenly divided in men and showed a slight predominance of adenocarcinoma in women. Sixty-two of the 64 cases had a smoking history of 20 pack-years or more and one of the non-smokers lived with a spouse who was a very heavy smoker. The remaining non-smoker had a very heavy asbestos exposure. The overall mortality of the group was 42.2% at the end of the study.

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Retained T-Tube Fragment: Removal Using a Gruntzig Balloon Dilatation Catheter

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GREGORY J. HEGYI, B.S.
Indianapolis

Abstract

A 30-year-old woman underwent an uncomplicated cholecystectomy and common bile duct exploration. However, when the T-tube was pulled, the stem fractured and a T segment was retained within the common duct. This unusual complication may be the result of T-tube defects or weakening of the latex rubber by resterilization of tubes opened but not used intraoperatively. Removal was accomplished using a Gruntzig balloon dilatation catheter.



FIGURE 1: Gruntzig catheter positioned coaxially within retained T-tube fragment.

THE DEVELOPMENT of radiologic techniques for the management of postoperative complications in biliary tract surgery has proven useful in avoiding reoperation in cases of retained common bile duct stones.[1] This report describes an unusual complication—fragmentation of a T-tube upon attempted removal—and its management using radiologic intervention.

Report of a Case

A 30-year-old woman with a five-year history of symptomatic cholelithiasis underwent elective cholecystectomy. An intraoperative cholangiogram showed choledocholithiasis. Common bile duct exploration was performed and 14 stones were removed using irrigation, stone forceps and choledochoscopy. A 14 French latex rubber T-tube was placed. The back wall of the "T" was excised and the ends trimmed to facilitate eventual removal. The choledochotomy was closed with interrupted 5-0 chromic sutures. A completion cholangiogram was normal. The T-tube was brought out above the incision in a gradual curve and secured to the abdominal wall.

The patient's postoperative course was unremarkable. A T-tube cholangiogram performed on the seventh postoperative day was normal and the T-tube was clamped. The patient was discharged on the eighth postoperative day with follow-up in the outpatient clinic.

To allow adequate time for maturation of the T-tube tract, removal was planned for the third postoperative week. Upon attempted removal, the stem of the T-tube fractured and a segment was retained within the common duct. The patient was referred to the Radiology Department for removal of this segment under fluoroscopic

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control.

A preliminary spot film disclosed the retained fragment. An attempt to remove the T-tube using placement of a Foley catheter and traction resulted in balloon rupture and failure. A wire loop snare placed through an H-1 catheter failed to engage either limb of the "T". Finally, a Gruntzig balloon dilatation catheter with a 6 mm balloon diameter and a 4 cm balloon length on a 9 French shaft was placed coaxially into the retained fragment and, following inflation, was successfully used to withdraw it (*Figure 1*). *Figure 2* shows the retrieved T-tube fragment.

The patient was observed overnight and subsequently discharged without further postoperative complications.

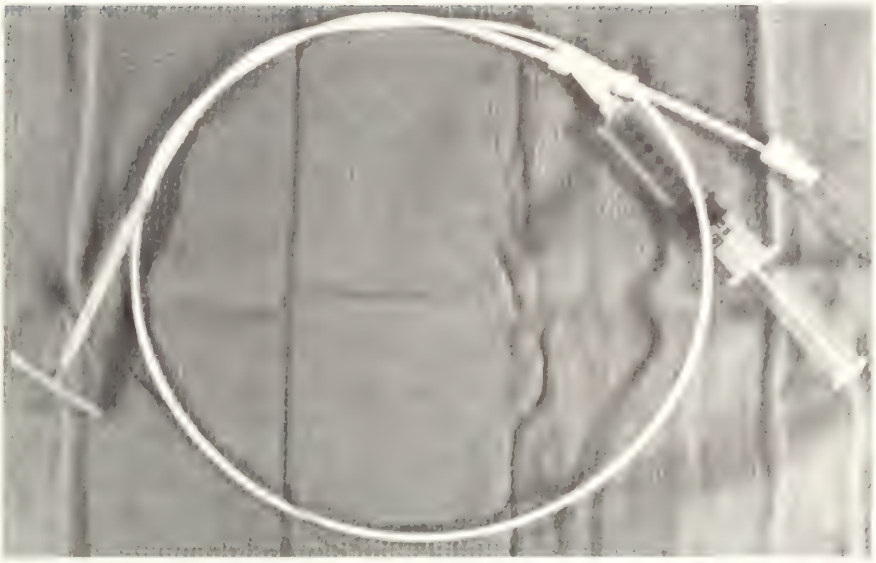


FIGURE 2: Gruntzig catheter with balloon still positioned inside the stem of the removed T-tube fragment.

Discussion

Although there are several studies detailing complications following T-tube removal,[2] we have been unable to find a report of a fractured T-tube with a segment retained within the common bile duct. Possible contributing factors include defective or outdated T-tubes, or inadvisable resterilization of disposable latex products.

The optimal time for maturation of T-tube tracts is five weeks.[1] At this time, radiologic or endoscopic manipulation may be safely performed. Removal of the T-tube in the early postoperative period may allow free intraperitoneal bile leakage,[2] whereas permitting the development of a tract postoperatively will conduct such drainage to the skin, as well as allow instrumentation if complications arise.

Intraoperative modifications of a standard T-tube, such as removing the back wall of the horizontal limb or cutting notches, have been recommended to facilitate removal from the common bile duct with minimal trauma.[2] These alterations, however, made the T-tube difficult to engage with the wire loop snare. In our patient, the Gruntzig balloon dilatation catheter provided the best means of extracting the retained T-tube fragment.

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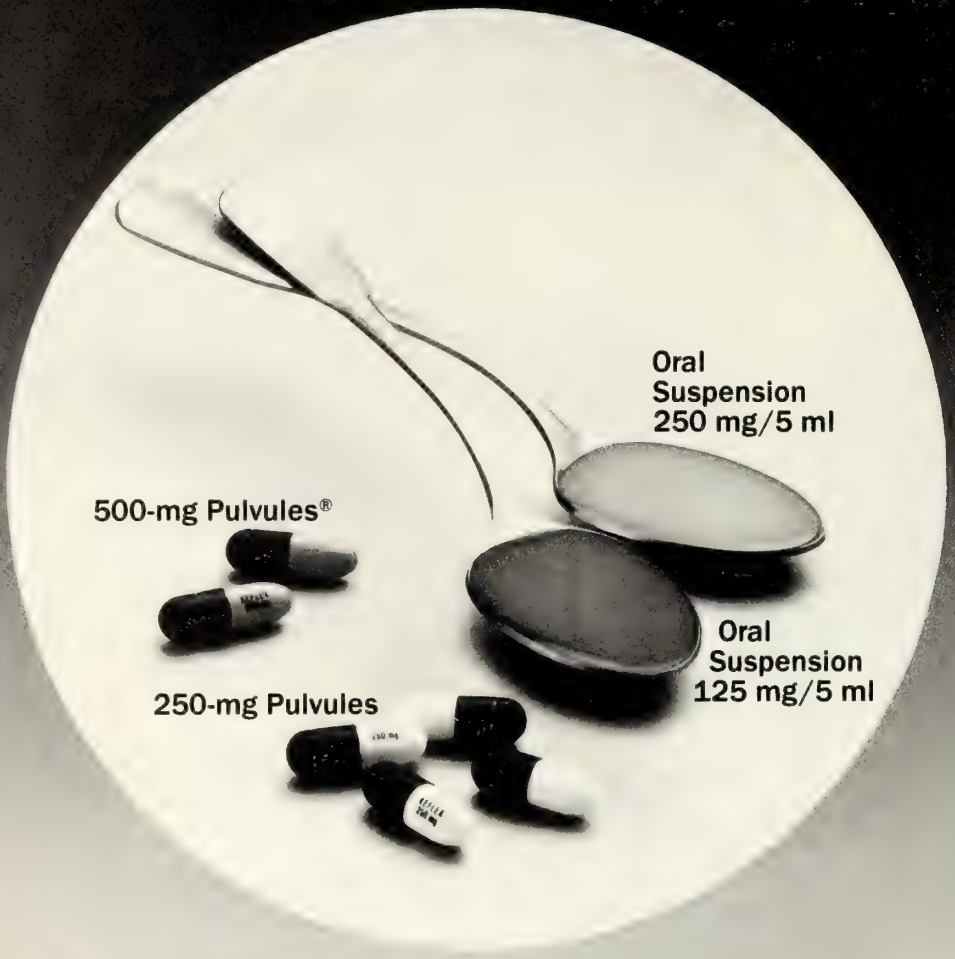
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Bee Sting Nephropathy in a Transplant Patient

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Indianapolis

Abstract

Insect stings have been associated with multiple clinical syndromes. Renal manifestations, while rare, have been reported. They have included a spectrum from nephrotic syndrome to acute renal failure. The following case history outlines a renal transplant patient who lost her graft from a combination of insect-induced glomerulonephritis and chronic rejection.

IN THE PRACTICE OF nephrology, the transplantation of kidneys into patients with end-stage renal disease has been one of medicine's most gratifying successes. With the advent of new and better medications, acute and chronic rejection have become less of a problem. It has been recognized since the beginning of transplanation, however, that certain factors can intervene to damage a functioning renal graft. The following case history describes a patient who we believe lost her graft secondary to an insect sting.

AC is a 63-year-old white woman who originally had her renal disease diagnosed in 1968. She was diagnosed as having chronic glomerulonephritis of undetermined etiology. Subsequently, she underwent bilateral nephrectomy for control of hypertension in 1968. Home hemodialysis was initiated and continued until she received a successful kidney transplant in 1972. The graft, from her sister, continued to function and the patient's immunosuppression was tapered to Prednisone, 5 mg qd without apparent loss of function. Her last visit to her nephrologist was in April 1984, at which time her creatinine was 1.6 mg/dl. This creatinine had been her long-term baseline.

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AC next presented in September 1984 to her local physician complaining of ankle swelling. She stated that she had been stung by a "hornet" approximately seven days earlier. This sting had been followed some hours later by myalgias and arthralgias. Two days following the sting, she began to notice the above mentioned ankle swelling, an unusual problem for her. Evaluation at that time disclosed a serum creatinine of 7 mg/dl. This creatinine prompted her transfer to our facility.

Evaluation at our institution (approximately 12 days following her sting) disclosed a medication history only of the previously mentioned prednisone and aspirin-5 grains qAM. Physical examination was notable only for 2+ pretibial edema and an easily felt transplanted kidney in the left lower quadrant of her abdomen. The kidney was not tender, nor did it feel unusually firm or tender.

Admitting lab tests included a serum creatinine of 7.1 mg/dl, BUN of 90 mg/dl, sodium of 138 meq/L, chloride of 115 meq/L, bicarbonate of 14 meq/L, and potassium of 5.8 meq/L. CBC was notable for a hemoglobin of 9.8 gm/dl and a white blood count of 19.4 thousand/uL. Admitting urinalysis showed a pH of 6, specific gravity of 1.015, occasional white and red blood cells and positive protein with only occasional hyaline and granular casts. Urine electrophoresis showed nonselective proteinuria (3-4 gms/24 hour collection). Serum protein electrophoresis, hepatitis B antigen, and C_4 levels were all normal. C_3 level was slightly decreased at 70 mg/dl (with a normal range of 94-214 mg/dl). Creatinine clearance measured via 24-hour urine was 5 cc/min.

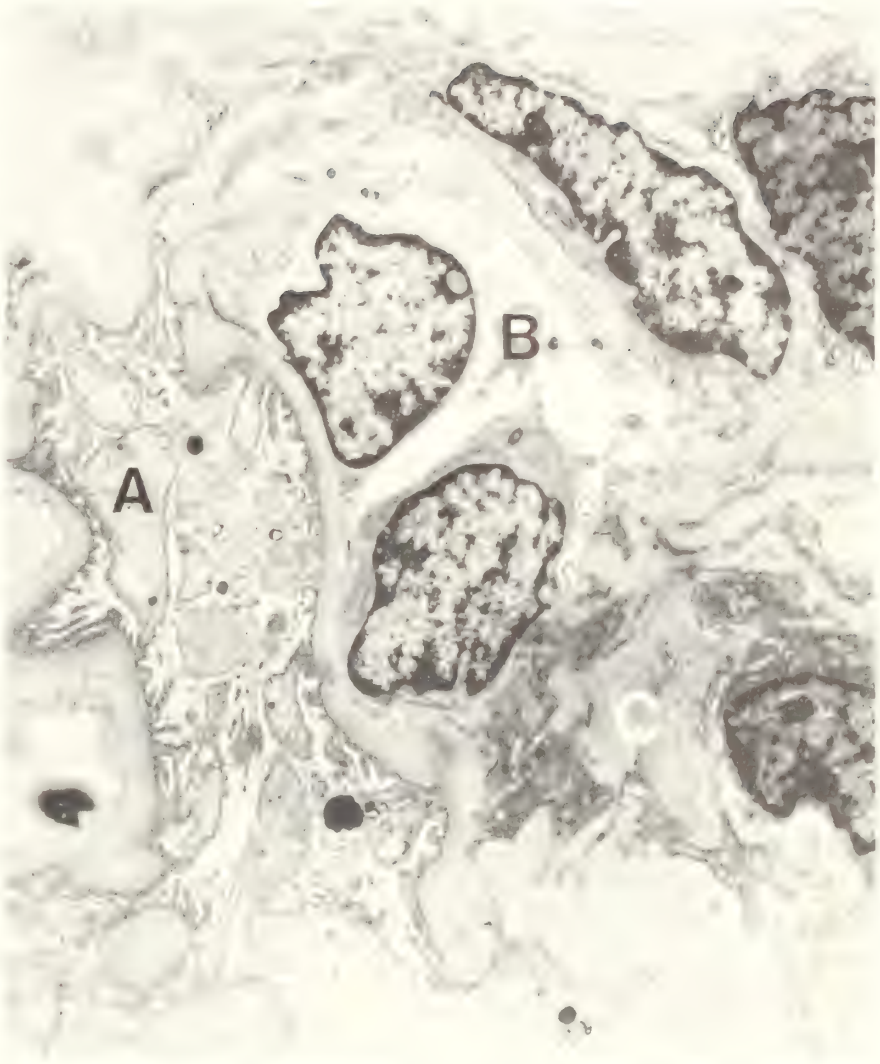
The patient was empirically started on Prednisone 20 mg qid on admission. Open renal biopsy was performed two days later. Light microscopy findings were discouraging with evidence of vascular sclerosis, chronic changes in renal tubules, patchy interstitial inflammatory infiltrate, and segmental sclerosis of glomerular mesangium consistent with chronic rejection. Immunofluorescence was negative for IgA, IgM, C_3 and C_4. Electron microscopy proved more interesting, however. This showed evidence of a generalized acute, relatively mild proliferative glomerulonephritis superimposed on an underlying, relatively chronic sclerosis involving glomerular tuft and mesangial regions (*see illustration*).

Despite continued treatment with the above noted steroid, the patient's urinary output gradually decreased and she required acute hemodialysis and eventual placement of a peritoneal dialysis catheter for chronic dialysis.

Follow-up at six months showed no sign of salvage of previous graft function. Radioallergosorbent test for two local species of hornets—white faced (volichobestula maculae), and yellow (arenaria maculae)—was negative.[1]

The usual response to an insect sting is one of mild local erythema.[2] Various reactions are possible, however, and range from barely symptomatic to one of anaphylaxis. One of the more common serious renal manifestations of an insect sting appears to be the nephrotic syndrome.[3,4,5,6] Renal biopsies of affected kidneys have ranged from normal to severe glomerular destruction and hyalinization. Acute renal failure has also been described and has been blamed on rhabdomyolysis,[7] interstitial nephritis, and acute tubular necrosis.[7] To our knowledge, no case of insect sting nephritis has contributed to the loss of a renal transplant graft, however.

The etiology of the loss of this patient's graft is not without dispute. While a normal creatinine was present in this patient four months prior to her evaluation, we cannot be certain that another insult did not precede the insect sting. As shown by the biopsy, the patient did have long-standing changes consistent with chronic rejection. We feel that the glomerulonephritis superimposed on this chronic rejection exhausted her renal reserve. This combination led to her once again coming to end-stage renal function.



Electron micrograph demonstrating the acute, relatively mild proliferative glomerulonephritis and underlying chronic sclerosis. A—proliferating glomerular epithelial cells; B—glomerular capillary lumen; C—focus of glomerular sclerosis. (magnification 8400 x; uranyl acetate/lead citrate staining.)

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Doctor-Patient Relationships: A Pastor's Perspective

WILLIAM G. ENRIGHT, Ph.D.
Indianapolis

'Usually, There Has Been a Breakdown in Communication Between the Doctor, the Patient and the Family When Courts of Law Are Brought into the Decision-Making Process. To Put it Another Way, in Such Instances the Physician's Covenant Has Not Been Taken Seriously'

Dr. Enright is Senior Pastor of the Second Presbyterian Church, Indianapolis. This paper was originally presented by Dr. Enright at a recent scientific meeting of the Indiana Chapter, American College of Physicians, where he was the banquet speaker.

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WHEN A RELIGIOUS person wanders into the field of science and medical ethics, he should speak clearly and simply, yet with caution and modesty. Thus, when I engage in moral inquiry here, I do so as a fellow traveler, not as someone who has all the answers. If, in the end, my words charge a battery in the flashlight which you use to probe the dark labyrinths of life and death, my purpose will have been served.

Three Doctor-Patient Situations

I begin by sharing with you three situations in which I was involved as a pastor involving doctors, hospitals, patients, and their families.

The first case centered on a parishioner, 50-55 years of age. He suffered a mild heart attack. Tests showed that he had two blocked coronary arteries. His doctor told him that he could have bypass surgery but advised against it. Why have surgery when exercise and medication might achieve the same results? The doctor did not tell the patient everything or even spell out all the options. He simply advised the man to begin treatment with medication and exercise. Five months later the man died while he was jogging. There were no lawsuits, but in the grief process the family became bitter and hostile. They felt the doctor had given the patient and family no choice but merely imposed upon them his wishes. The family kept asking themselves what the outcome would have been if surgery had been performed. They felt the doctor had not really leveled with them.

In his book, *The Physician's Covenant*,[1] William May notes that physicians often see themselves as parents. He writes:

"Insofar as physicians respond to the patient's urge to avoid death, they tend to become parental figures who reassure their children and shelter them from the powers that are killing them. Kindness rather than candor becomes the chief moral virtue one expects from such a professional."

The strength of this model of doctor as parent is that, as a parent, the doctor cares deeply and personally about the patient. Compassion, benevolence, and patient advocacy all characterize the doctor-patient relationship. And in this case the doctor really did care. At the death of his patient he grieved; I saw the tears.

The weakness of the role of doctor as parent is that the doctor can easily become paternalistic, thus insulting patients by treating them as children—by telling them what they should do, rather than allowing them to be partners in the decision-making process. Another ethicist, James Childress,[2] has written that such doctors "act on a person's behalf but not at that person's behest." The upshot is that patients lose their autonomy. In situation #1 the doctor, as parent, decided for the patient.

In a second situation, the patient was a man in his early sixties. He had suffered a stroke which left him paralyzed on one side. This and a series of business adversities left him depressed, and he began to drink heavily. In time, he developed heart failure. It seemed to be an open question: Did he belong in the psychiatric wing or on the cardiology service? His condition deteriorated further; he faced amputation of both legs because of circulatory problems. Literally, he was a man with

neither hope nor will. The family, knowing well the situation, met with the doctors and informed them that they wanted no heroic measures to be used. While he was awaiting amputation, he suffered a massive coronary and died. The young intern in the critical care unit had the man coded and put him on a respirator. Life was restored. The next day, I was there when an angry family met with an equally angry young doctor. The family was angry because their request for no heroics had been ignored. The physician was angry because the family did not share his belief life was something to be preserved at all costs. The man lingered on, in agony, for two weeks; then he died, broken and bankrupt.

Some doctors see themselves to be parents. This doctor saw himself to be a warrior-soldier. As the fighter against death, the young intern seized the power at his disposal to do battle with the enemy and he won—or did he? As one resident put it: "As a university teaching service, we attempt resuscitation on all patients, particularly at the beginning of the semester."[3]

Part of me says, "Thank God for doctors who see themselves to be warrior-soldiers." After all, where would medical science be, where would some people be today, were it not for the persistence and valor of physicians in fighting death? Here's the rub—sometimes extending life only prolongs death. Where and how do we make a place for "quality of life" issues as your *American College of Physicians' Ethics Manual* puts it.[4]

It seems to me that the danger to which the warrior-soldier must be sensitive is that of limiting life to that which is purely *bios* (heart-beat and brain-wave) at the expense of life as *persona*. Sometimes I fear that we are too quick to separate the physical from the person when we limit life to that which is merely biological. Be it a fetus or someone terminally ill, must life be preserved at all costs?

As I understand it, that sixth commandment of the Judeo-Christian Ethic "You shall not kill" could be more accurately translated "You shall not murder." Negatively, it is an injunction against indiscriminate, premeditated killing. Positively, it means, you shall respect the sacredness of persons.

William May puts it well: "Most modern people equate a good death with a sudden death. They want to go quickly in an accident; they prefer a heart attack to cancer. As the tavern sign puts the contemporary creed:

Here's to a long life and a merry one
A quick death and an easy one
A pretty girl and a true one
A cold beer and another one."[5]

But as every human knows, life doesn't go that way, either on Main Street or in the Critical Care Unit. So we must become sensitive to the issues of quality of life and the sacredness of persons. In situation #2 the doctor, as warrior-soldier, fought death at all costs.

In the third situation, the patient was an octogenarian. For years she had lived with only one kidney. She became a cancer victim; infection set in; her good kidney shut down. Then she became comatose and was placed on a respirator. Two doctors met with the family in the hospital hallway. They said, "You have two choices. We are treating your mother with antibiotics, but without kidneys it is a losing battle. She will not last more than two days. We can maintain that kind of treatment; but, in effect, we are pulling the plug. The other alternative is to put your mother on a dialysis machine. If we do that, she will probably last two weeks or maybe two months. Please let us know as soon as possible your decision." They left a shocked family who telephoned me. It was clear that one son wanted to let the mother die, easily and quickly. The other son was in another city and not so sure. He remembered his mother had always been one to hold on to life, even if by a thread.

In this case, a miracle happened. While I was there, the mother regained consciousness. Although it would be difficult, I urged the family to consult with her and inform her of the options of her condition; then let her decide. It was not the decision I would have made or advised, but she opted for dialysis. Ten days later she died. The family buried her in peace.

Some doctors see themselves to be parents; others, warrior-soldiers. In this case, the doctors saw themselves to be technicians or technical engineers. As such, the engineer lives in and through the engines he or she tends. So the machine becomes (to quote William May) "Autonomous. Instead of the machine serving the patient's life and assisting that person's recovery so as to permit him or her once again to serve others, the patient serves the machine."[6] Thus, excellent technical performance becomes the center of the professional ethic. And God knows those machines do work; they do save lives; they do make a difference between life and death, between a life of quality and a life of question. Technicians can tell us what the machines are capable of and they can hook us up to the machines—but I wonder. Is the technician to be so cold and neutral? Is the choice simply to be dumped into the patient's lap? Is the machine the answer in all cases? And are those machines, as in this case, the means to saving life or prolonging death? In situation #3 the doctor, as technician, can start the machine; but who decides when and how to stop the machine? Obviously, machines can't make such decisions.

To parody Charles Dickens—Technology leaves us living in the best and the worst of times, in the age of wisdom and foolishness. Each of these three situations poses for us the question: How do we go about the business of making decisions in life-threatening and terminal situations? Obviously, the doctor as the parent simply cannot make the decision for us. Neither can the doctor as warrior-soldier or technician pass the decision on to a machine. Moreover, as a caring human being, as a moral agent, as the patient advocate,

the doctor dares not dump the decision in the patient's lap with a "whatever will be, will be" attitude. Patients, for all their right to autonomy, have not the wisdom or expertise to decide solely on their own. Just as the doctor must be sensitive to the patient's autonomy, so, too, must the patient be sensitive to the doctor's wisdom and conscience.

A Doctor-Patient Model

Is there a model which might give us insight and ethical guidance in our decision-making at the boundaries of life? I think there is. It is what William May has called "The Physician's Covenant."[7]

The word "covenant" brings together a concept central to both current medical literature and the Judeo-Christian tradition. Your *ACP Ethics Manual* uses the word covenant on two occasions in this way: "Truly informed consent is most apt to be achieved through effective personal communication within the physician-patient *covenant*. It is not achieved by perfunctory signing of a legal consent form ... Under the *covenant* of personal medical care the physician is ordinarily the advocate and champion of his patient."[8]

In a recent article Thomasma and Brumlik further clarify this notion of covenant when they talk about the "ethics of discretion" in which the doctor, the patient, and the patient's family form a community of intimacy "based on the unique character of the doctor-patient relationship, rather than on universal laws, rules and regulations."[9]

My dictionary defines this word covenant as "an agreement between two or more persons to do or refrain from doing some act: a compact."

Usually, there has been a breakdown in communication between the doctor, the patient and the family when courts of law are brought into the decision-making process. To put it another way, in such instances the physician's covenant has not been taken seriously.

What I would hope we might discover or rediscover is the Judeo-Christian understanding of this word covenant. For here, the covenant is a non-legal type of agreement. It is an agreement based more on the character and the word of the people involved than on any formal contract.

From a religious point of view, a covenant has three ingredients. First, a covenant is a *gift*—a gift freely given, a commitment initiated by one party. So it was God who made a covenant with Israel. It was God who delivered the Hebrew people from Egyptian captivity. Second, a covenant always carries with it a *promise*. For example, in a religious marriage ceremony two partners enter into a "promise and covenant" with each other. A covenant is a kind of mutual fidelity based on trust and good intentions. Third, the covenant embodies *a way of life*. As a sign of the covenant, people agree to pursue a way of life befitting such an agreement. So we have the Ten Commandments.

Application of the Covenant Model

Now what might such an understanding of covenant as enlightened by the Judeo-Christian religion say to us in life-threatening and terminal situations?

First, it frees us to *act with compassion*. It suggests that we are not bound by a legal or social contract. Thus, we need not think or act in terms of the limits of the contract or out of fear of legal recriminations. We can truly do what we think to be best. We can be people of compassion; and compassion, you will recall, comes from two latin words, "Pati" and "Cum," which together mean "to suffer with." We can, if you will, even try to live and act by the golden rule which at the borderlines of life means, "Is this something I would want someone to do to me, or for me, were I the patient?"

Second, the covenant allows us *to be ourselves*. The religious tradition of a covenant has about it a keen sense of reality. It is an understanding etched in grace rather than in rigid commands. A true covenant is not broken by the vicissitudes of human failure and fickleness. Implicit in covenant-making is the awareness that there may be times when one party does not live up to expectations of the understanding. Still, in the end the covenant stands without any recriminations. Covenants are made knowing they may be broken; but never will they be discarded or abandoned. Thus, we can be ourselves. The pressure to be perfect or infallible is off.

Third, the covenant frees us to *face the hard questions*. A covenant takes seriously the presence of transcendence, or God. Indeed, the power of a covenant is that it frees us to be ourselves by reminding us that we are human. This means that from our human point of view, we can wrestle with the ambiguities of life and death because someone else is the final arbitrator. And behind the religious covenant stands the conviction that as final arbitrator, that someone else is our friend. Indeed, it is the specter of transcendence that encourages us to ask and anticipate the hard and terminal questions.

Fourth, the notion of covenant *takes dialogue* between the covenanting parties *seriously*. It allows the doctor to be what his name implies, a teacher. It frees the doctor to share knowledge and information. It also assumes that the patient or the patient's family are adults and capable of wrestling with the facts. Just as the doctor informs the patient, so the patient can inform the doctor.

In a recent study on cardiopulmonary resuscitation, it was discovered that in 68% of the cases, the doctors had formed an opinion as to the patient's attitude toward resuscitation; but in only 19% of the instances had the doctor actually discussed the situation with the patient.[10] Moreover, the study showed that the correlation was very weak between the doctor's opinion and the patient's desires. In a true covenant, dialogue cannot be one-sided; but to avoid such arbitrariness, the ter-

minal situation must be anticipated. I suspect that our failure to discuss such situations is as much the fault of the patient as it is the doctor.

Fifth and finally, the covenant enables us *to act boldly*. I would suggest that the notion of a covenant can be helpful in putting the life-threatening and terminal situations in perspective by forcing us to reflect upon the ends toward which we move. Philosophers call this kind of reflection teleology. They remind us that the ends toward which we move do shape the decisions we make as to how we will live. Ignore the questions of ends and we humans do not cope well with life-threatening or terminal situations. My fear is that, at times, we extend the trauma and suffering of a life because we are plain afraid to die. We will do anything to avoid death and sometimes to avoid making decisions. Martin Luther had a graphic saying: "Sin boldly, but believe even more boldly in the Gospel."[11] By that he meant when you face a difficult decision, when you don't know what to do but you must do something, do what you think is best. If it turns out right, well and good. If it turns out wrong, all God asks is that we do our best. God does not hold us responsible for our best judgments gone wrong. So, we are free to act and to act boldly.

Of course, flexibility must be built into the covenant model of the doctor-patient relationship. As a non-legal agreement, the covenant provides for such flexibility. There will be times when one of these five criteria will dominate to the exclusion of others. For example, when the patient is comatose or unresponsive, dialogue is an impossibility so the doctor can only act boldly and with compassion. There also will be situations when patients want doctors to make decisions for them: "Do what you think best, Doc." In the long run, however, it usually is best for physicians to discuss decisions fully with patients and if appropriate with families. Dialogue is the important ingredient. Effective communication will enhance the doctor-patient relationship, patient compliance, and, therefore, the effectiveness of medical treatment.

In closing, let me twit you a bit. Robert Veatch, Professor at Georgetown University's Kennedy Institute of Ethics, notes that some studies suggest physicians have "an unusually high fear of death."[12] It is therefore not surprising to discover that "physicians and patients tend to differ dramatically on what they say should be told a terminal patient."[13] If physicians as a group have a more difficult time facing death than the patients they treat, not only may doctors find discussions about terminal illness difficult, they may also have a greater than normal desire to conquer death, a strategy not always in the patient's best interests.

The Judeo-Christian concept of covenant allows us to put life-threatening and terminal situations in perspective by asking us to examine the ends toward which we move and by which we live. There is an old parable which puts well this idea of transcendence as one of the bookends of life: Once upon a time two travelers set out together along the same road. One of them believed the road led somewhere; the other believed the road led nowhere. Since there was only one road, the two travelers had no choice but to share it together. Neither had ever been that way before; neither knew what awaited them around every corner. Together they experienced good times and bad times. There was very little difference between what the two travelers experienced as they walked together; only one believed he was going somewhere, the other, nowhere. Yet when they turned the last corner, one was proven right, the other, wrong.

Life-threatening and terminal situations are like the turn of the last corner. If we feel we are going nowhere, I fear we too easily pass the buck on who makes the decision. Perhaps we try to prolong the journey at too great a price, both in dollars and in suffering, convinced that this life is, indeed, all we have. On the other hand, if we think there is something around the last corner and we call that something transcendence, or God, then the life threatening or terminal situation loses its terrifying finality.

How we anticipate or view the last corner shapes how we act. Professor Paul Ramsey has put it well: "The right medical practice will provide those who may get well with the assistance they need, and it will provide those who are dying with the care and assistance they need in their final passage. To fail to distinguish between these two sorts of medical practice would be to fail to act in accordance with the facts."[14]

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The Governor and Education Reform

The Voice of Business

JOHN W. WALLS
President
Indiana State
Chamber of Commerce

GOVERNOR ORR made a speech recently. Nothing newsworthy in that. There are 50 governors of 50 states hopping around orating all the time.

But this speech was different. The topic was education reform, and in that particular wacky world where platitudinous ponderosity normally passes as revealed wisdom, our governor did himself proud.

Namely, he did a rare thing in the education debate. He made sense.

The governor cut through the fog surrounding a complicated monster known as the state "school formula" and reached a simple but profound conclusion: The state pays $1.8 billion per year to local schools based solely on past input. With all of our heated rhetoric about wanting better schools—which can only mean that we want better future output from the schools—the state, in fact, is sending a nearly $2 billion signal that improvement is not really necessary to continue to receive support from the state's tax sources.

In describing the drawback in our current system of subsidizing school inputs, the governor said:

"What's wrong with it is that it has nothing to do with whether or not our kids get a good education. It ignores the product. That's like judging the best chocolate cake at the church picnic by seeing who used the best recipe. Who cares about the recipe if the cake doesn't taste good?"

No Incentives for Change

The governor continued: "Today, not one Indiana school district gets more for doing a better job. Under the current formula, there are no incentives for local school corporations to do anything different from what they're doing right now. If we're supposed to be encouraging excellence, how much sense does that make?"

If the distinguished philosopher, Alfred North Whitehead, was right in his observation that the only simplicity to be trusted is simplicity on the far side of complexity, then Gov. Orr has succeeded amazingly.

The school formula is certainly complex—there is almost no one who understands it. Getting beyond this particular complexity means tearing it apart well enough to be able to ask and answer, "What is the formula really telling schools to do?" Answer: "Go on doing what you're doing." Since this is not what we want, we had better change the message and quickly build in some effective incentives for improvement!

The governor suggested a variety of possibilities for output measures.

Improvements in standardized test scores are one obvious choice, particularly since we are developing the Indiana Statewide Test For Educational Progress. INSTEP promises to be an accurate measure of whether a child has achieved the proficiencies expected of him in a given grade. But there are many other measures of improved schools which could be used.

Governor Orr also spoke to the objection that dissimilar school systems could not be fairly compared with each other. If that is a problem, he said, since we're concerned with all schools getting better, why not compare each school system against itself and reward improvement over time against its past achievement levels?

Many Upset by Speech

As may be expected, the correctness of the governor's analysis caused temperatures to rise in certain parts of the education establishment. He anticipated that in his speech, too, by observing, "When word hits the street that the governor thinks we should change the school formula, all the 'insiders' will go crazy."

They most certainly did! The air had barely settled down before the negative comments began to pile up. "Can't be done." "What does an outsider know about education?" "Just give us more money." And so forth.

In other words, that dark clouds on the horizon look very much like war clouds. Should there be war over the school formula, the battle will in reality concern nothing less than the future of our schools. Governor Orr has aimed his artillery at the well-defended fortress protecting the status quo for Indiana education.

The business community in Indiana has an immense stake in improving the product of Indiana's school system. Business leaders—and anybody else interested in this kind of improvement—should enlist for the duration.

10 YEARS

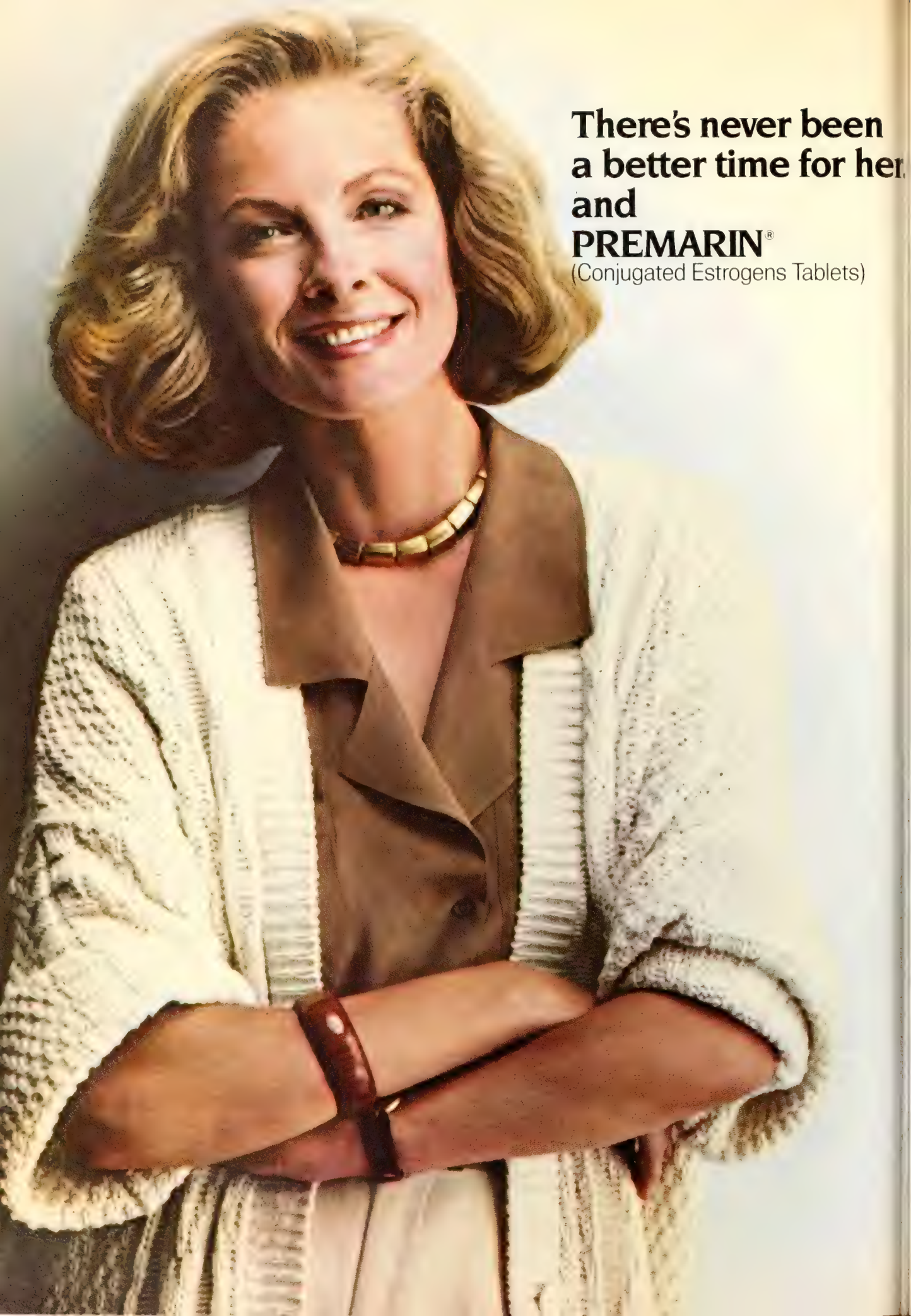
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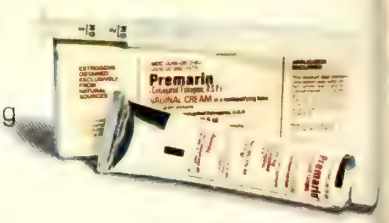
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0.625mg/g



BRIEF SUMMARY *(FOR FULL PRESCRIBING INFORMATION AND PATIENT INFORMATION, SEE PACKAGE CIRCULARS.)*

PREMARIN® Brand of conjugated estrogens tablets, USP
PREMARIN® Brand of conjugated estrogens Vaginal Cream in a nonliquefying base

1. ESTROGENS HAVE BEEN REPORTED TO INCREASE THE RISK OF ENDOMETRIAL CARCINOMA

Three independent case control studies have reported an increased risk of endometrial cancer in postmenopausal women exposed to exogenous estrogens for more than one year. This risk was independent of the other known risk factors for endometrial cancer. These studies are further supported by the finding that incidence rates of endometrial cancer have increased sharply since 1969 in eight different areas of the United States with population-based cancer reporting systems, an increase which may be related to the rapidly expanding use of estrogens during the last decade. The three case control studies reported that the risk of endometrial cancer in estrogen users was about 4.5 to 13.9 times greater than in nonusers. The risk appears to depend on both duration of treatment and on estrogen dose. In view of these findings, when estrogens are used for the treatment of menopausal symptoms, the lowest dose that will control symptoms should be utilized and medication should be discontinued as soon as possible. When prolonged treatment is medically indicated, the patient should be reassessed on at least a semiannual basis to determine the need for continued therapy. Although the evidence must be considered preliminary, one study suggests that cyclic administration of low doses of estrogen may carry less risk than continuous administration; it therefore appears prudent to utilize such a regimen. Close clinical surveillance of all women taking estrogens is important. In all cases of undiagnosed persistent or recurring abnormal vaginal bleeding, adequate diagnostic measures should be undertaken to rule out malignancy. There is no evidence at present that "natural" estrogens are more or less hazardous than "synthetic" estrogens at equiestrogenic doses.

2. ESTROGENS SHOULD NOT BE USED DURING PREGNANCY

The use of female sex hormones, both estrogens and progestogens, during early pregnancy may seriously damage the offspring. It has been shown that females exposed in utero to diethylstilbestrol, a non-steroidal estrogen, have an increased risk of developing in later life a form of vaginal or cervical cancer that is ordinarily extremely rare. This risk has been estimated as not greater than 4 per 1,000 exposures. Furthermore, a high percentage of such exposed women (from 30% to 90%) have been found to have vaginal adenosis, epithelial changes of the vagina and cervix. Although these changes are histologically benign, it is not known whether they are precursors of malignancy. Although similar data are not available with the use of other estrogens, it cannot be presumed they would not induce similar changes. Several reports suggest an association between intrauterine exposure to female sex hormones and congenital anomalies, including congenital heart defects and limb reduction defects. One case control study estimated a 4.7-fold increased risk of limb reduction defects in infants exposed in utero to sex hormones (oral contraceptives, hormone withdrawal tests for pregnancy, or attempted treatment for threatened abortion). Some of these exposures were very short and involved only a few days of treatment. The data suggest that the risk of limb reduction defects in exposed fetuses is somewhat less than 1 per 1,000. In the past, female sex hormones have been used during pregnancy in an attempt to treat threatened or habitual abortion. There is considerable evidence that estrogens are ineffective for these indications, and there is no evidence from well controlled studies that progestogens are effective for these uses. If PREMARIN is used during pregnancy, or if the patient becomes pregnant while taking this drug, she should be apprised of the potential risks to the fetus, and the advisability of pregnancy continuation.

DESCRIPTION: PREMARIN (conjugated estrogens, USP) contains a mixture of estrogens, obtained exclusively from natural sources, blended to represent the average composition of material derived from pregnant mares' urine. It contains estrone, equilin, and 17α-dihydroequilin, together with smaller amounts of 17α-estradiol, equilenin, and 17α-dihydroequilenin as salts of their sulfate esters. Tablets are available in 0.3 mg, 0.625 mg, 0.9 mg, 1.25 mg, and 2.5 mg strengths of conjugated estrogens. Cream is available as 0.625 mg conjugated estrogens per gram.

INDICATIONS AND USAGE: PREMARIN (conjugated estrogens tablets, USP): Moderate-to-severe *vasomotor* symptoms associated with the menopause. (There is no evidence that estrogens are effective for nervous symptoms or depression without associated vasomotor symptoms and they should not be used to treat such conditions.) **Osteoporosis (abnormally low bone mass).** Atrophic vaginitis. Kraurosis vulvae. Female castration.

PREMARIN (conjugated estrogens) Vaginal Cream is indicated in the treatment of atrophic vaginitis and kraurosis vulvae. PREMARIN HAS NOT BEEN SHOWN TO BE EFFECTIVE FOR ANY PURPOSE DURING PREGNANCY AND ITS USE MAY CAUSE SEVERE HARM TO THE FETUS (SEE BOXED WARNING).

Concomitant Progestin Use: The lowest effective dose appropriate for the specific indication should be utilized. Studies of the addition of a progestin for 7 or more days of a cycle of estrogen administration have reported a lowered incidence of endometrial hyperplasia. Morphological and biochemical studies of the endometrium suggest that 10 to 13 days of progestin are needed to provide maximal maturation of the endometrium and to eliminate any hyperplastic changes. Whether this will provide protection from endometrial carcinoma has not been clearly established. There are possible additional risks which may be associated with the inclusion of progestin in estrogen replacement regimens. (See PRECAUTIONS.) The choice of progestin and dosage may be important; product labeling should be reviewed to minimize possible adverse effects.

CONTRAINDICATIONS: Estrogens should not be used in women (or men) with any of the following conditions: 1. Known or suspected cancer of the breast except in appropriately selected patients being treated for metastatic disease. 2. Known or suspected estrogen-dependent neoplasia. 3. Known or suspected pregnancy. (See Boxed Warning.) 4. Undiagnosed abnormal genital bleeding. 5. Active thrombophlebitis or thromboembolic disorders. 6. A past history of thrombophlebitis, thrombosis, or thromboembolic disorders associated with previous estrogen use (except when used in treatment of breast or prostatic malignancy).

WARNINGS: Long-term continuous administration of natural and synthetic estrogens in certain animal species increases the frequency of carcinomas of the breast, cervix, vagina, and liver. There are now reports that estrogens increase the risk of carcinoma of the endometrium in humans. (See Boxed Warning.) At the present time there is no satisfactory evidence that estrogens given to postmenopausal women increase the risk of cancer of the breast, although a recent study has raised this possibility. There is a need for caution in prescribing estrogens for women with a strong family history of breast cancer or who have breast nodules, fibrocystic disease, or abnormal mammograms. A recent study has reported a 2- to 3-fold increase in the risk of surgically confirmed gallbladder disease in women receiving postmenopausal estrogens.

Adverse effects of oral contraceptives may be expected at the larger doses of estrogen used to treat prostatic or breast cancer or postpartum breast engorgement; it has been shown that there is an increased risk of thrombosis in men receiving estrogens for prostatic cancer and women for postpartum breast engorgement. Users of oral contraceptives have an increased risk of diseases, such as thrombophlebitis, pulmonary embolism, stroke, and myocardial infarction. Cases of retinal thrombosis, mesenteric thrombosis, and optic neuritis have been reported in oral contraceptive users. An increased risk of postsurgery thromboembolic complications has also been reported in users of oral contraceptives. If feasible, estrogen should be discontinued at least 4 weeks before surgery of the type associated with an increased risk of thromboembolism, or during periods of prolonged immobilization. Estrogens should not be used in persons with active thrombophlebitis, thromboembolic disorders, or in persons with a history of such disorders in association with estrogen use. They should be used with caution in patients with cerebral vascular or coronary artery disease. Large doses (5 mg conjugated estrogens per day), comparable to those used to treat cancer of the prostate and breast, have been shown to increase the risk of nonfatal myocardial infarction, pulmonary embolism and thrombophlebitis. When doses of this size are used, any of the thromboembolic and thrombotic adverse effects should be considered a clear risk.

Benign hepatic adenomas should be considered in estrogen users having abdominal pain and tenderness, abdominal mass, or hypovolemic shock. Hepatocellular carcinoma has been reported in women taking estrogen-containing oral contraceptives. Increased blood pressure may occur with use of estrogens in the menopause; blood pressure should be monitored with estrogen use. A worsening of glucose tolerance has been observed in patients on estrogen-containing oral contraceptives. For this reason, diabetic patients should be carefully observed. Estrogens may lead to severe hypercalcemia in patients with breast cancer and bone metastases.

PRECAUTIONS: Physical examination and a complete medical and family history should be taken prior to the initiation of any estrogen therapy with special reference to blood pressure, breasts, abdomen, and pelvic organs, and should include a Papanicolaou smear. As a general rule, estrogen should not be prescribed for longer than one year without another physical examination being performed. Conditions influenced by fluid retention such as asthma, epilepsy, migraine, and cardiac or renal dysfunction, require careful observation. Certain patients may develop manifestations of excessive estrogenic stimulation, such as abnormal or excessive uterine bleeding, mastodynia, etc. Prolonged administration of unopposed estrogen therapy has been reported to increase the risk of endometrial hyperplasia in some patients. Oral contraceptives appear to be associated with an increased incidence of mental depression. Patients with a history of depression should be carefully observed. Preexisting uterine leiomyomata may increase in size during estrogen use. The pathologist should be advised of estrogen therapy when relevant specimens are submitted. If jaundice develops in any patient receiving estrogen, medication should be discontinued while the cause is investigated. Estrogens should be used with care in patients with impaired liver function, renal insufficiency, metabolic bone diseases associated with hypercalcemia, and in young patients in whom bone growth is not complete. If concomitant progestin therapy is used, potential risks may include adverse effects on carbohydrate and lipid metabolism.

The following changes may be expected with larger doses of estrogen:

a. Increased sulfobromophthalein retention.

b. Increased prothrombin and factors VII, VIII, IX, and X; decreased antithrombin 3; increased platelet epinephrine-induced platelet aggregability.

c. Increased thyroid binding globulin (TBG) leading to increased circulating total thyroid hormone, as measured by PBI, T4 by column, or T4 by radioimmunoassay. Free T3 resin uptake is decreased, reflecting the elevated TBG; free T4 concentration is unaltered.

d. Impaired glucose tolerance.

e. Decreased pregnanediol excretion.

f. Reduced response to metyrapone test.

g. Reduced serum folate concentration.

h. Increased serum triglyceride and phospholipid concentration. As a general principle, the administration of any drug to nursing mothers should be done only when clearly necessary since many drugs are excreted in human milk.

ADVERSE REACTIONS: The following have been reported with estrogenic therapy, including oral contraceptives: breakthrough bleeding, spotting, change in menstrual flow; dysmenorrhea; premenstrual-like syndrome; amenorrhea during and after treatment; increase in size of uterine fibromyomata, vaginal candidiasis, changes in cervical erosion and in degree of cervical secretion; cystitis-like syndrome; tenderness, enlargement, secretion (of breasts); nausea, vomiting, abdominal cramps, bloating; cholestatic jaundice; chloasma or melasma which may persist when drug is discontinued; erythema multiforme; erythema nodosum; hemorrhagic eruption; loss of scalp hair; hirsutism; steepening of corneal curvature; intolerance to contact lenses; headache, migraine, dizziness, mental depression, chorea; increase or decrease in weight; reduced carbohydrate tolerance; aggravation of porphyria, edema; changes in libido.

ACUTE OVERDOSAGE: May cause nausea, and withdrawal bleeding may occur in females.

DOSAGE AND ADMINISTRATION:

PREMARIN® Brand of conjugated estrogens tablets, USP

1. *Given cyclically for short-term use only.* For treatment of moderate to severe *vasomotor* symptoms, atrophy, vaginitis, or kraurosis vulvae associated with the menopause (0.3 to 1.25 mg or more daily). The lowest dose that will control symptoms should be chosen and medication should be discontinued as promptly as possible. Administration should be cyclic (eg, three weeks on and one week off). Attempts to discontinue or taper medication should be made at three- to six-month intervals.

2. *Given cyclically.* Female castration. Osteoporosis. Female castration—1.25 mg daily, cyclically. Adjust upward or downward according to response of the patient. For maintenance, adjust dosage to lowest level that will provide effective control. Osteoporosis—0.625 mg daily. Administration should be cyclic (eg, three weeks on and one week off).

Patients with an intact uterus should be monitored for signs of endometrial cancer and appropriate measures taken to rule out malignancy in the event of persistent or recurring abnormal vaginal bleeding.

PREMARIN® Brand of conjugated estrogens Vaginal Cream

Given cyclically for short-term use only. For treatment of atrophic vaginitis or kraurosis vulvae.

The lowest dose that will control symptoms should be chosen and medication should be discontinued promptly as possible.

Administration should be cyclic (eg, three weeks on and one week off).

Attempts to discontinue or taper medication should be made at three-to-six month intervals.

Usual dosage range: 2 to 4 g daily, intravaginally, depending on the severity of the condition.

Treated patients with an intact uterus should be monitored closely for signs of endometrial cancer and appropriate diagnostic measures should be taken to rule out malignancy in the event of persistent or recurrent abnormal vaginal bleeding.

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1. Whitehead MI, Townsend PT, Pryse-Davies J, et al: Effects of estrogens and progestins on the biochemistry and morphology of the postmenopausal endometrium. *N Engl J Med* 1981;305:1599-1605. **2.** Paterson MEL, Wiles A, Evans T, Sturdee DW, et al: Endometrial disease after treatment with oestrogens and progestogens in the climacteric. *Br Med J* 1980;280:822-824. **3.** Magos AL, Brincat M, Studd JWW, et al: Amenorrhea and endometrial atrophy with continuous oral estrogen and progestogen therapy in postmenopausal women. *Obstet Gynecol* 1985;67:496-499. **4.** Whitehead MI, Lane G, Siddle N, et al: Avoidance of endometrial hyperstimulation in estrogen-treated postmenopausal women. *Semin Reprod Endocrinol* 1983;1:1;41-52. **5.** Barnes RB, Roy S, Lobo RA: Comparison of lipid and androgen levels after conjugated estrogen or depo-medroxyprogesterone acetate treatment in postmenopausal women. *Obstet Gynecol* 1985;66:216-219.

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TED L. GRISELL, M.D.
Indianapolis

THE CHURCH

NOT TOO MANY YEARS ago, my wife and I used to attend the week-long postgraduate meetings of the Pan-Pacific Surgical Association in Hawaii. The members of this group were from the countries that border the Pacific Ocean. It met every three years in Hawaii, providing educational lectures. Afterward, members were free to visit the islands of Hawaii to enjoy the amenities.

On one such occasion, I decided to spend several days on the island of Maui. I met a high school teacher from the island of Molokai who flew a Navion aircraft that would carry five people easily or six if crowded. He said he did some charter flying but that his principal means of supporting the flying of the aircraft was a contract with the state of Hawaii to deliver perishable foods on a daily basis to the peninsula of Kalaupapa.

Kalaupapa is the leper colony of the Hawaiian Islands and the state of Hawaii. It consists of a two- by three-mile peninsula that is inaccessible by land because of a sheer cliff of several hundred feet that prevents building an adequate highway from the main portion of Molokai to the leper colony. The non-perishable foods, canned materials, etc., were delivered by boat, usually on a monthly basis.

The story of the beneficial efforts on the part of Father Damien, a priest from Europe who came in the 1880s to succor the unfortunate lepers, is well known. Father Damien was responsible for building a church on the island. The U.S. government, many years ago, built a hospital there for the care of the lepers.



But the lepers soon discovered that doctors in the hospital usually didn't hospitalize them unless they were terminal; therefore, since the hospital was seen as a place to go to die, the lepers would not attend or accept any treatment directed by hospital personnel. As a result, the hospital withered until it was closed; the building gradually disappeared at the hands of leper families who took the wood and building materials to augment their own quarters.

At our request, the teacher who did the flying offered to fly Dr. Larry Sims of Indianapolis, me and our wives to the island "for educational purposes." At the time we visited, visitation was permitted as long as the people were over 21 and had presumably some significant purpose for the visit. We indicated our interest in the medical functions of the hospital and, since the Pan-Pacific Surgical Association was somewhat a sponsor of the medical care offered to the lepers, we were granted permission to visit.

We flew to the island one Sunday morning and were met at the little airstrip by a leper driving a Cadillac. Almost all of the 140-some lepers had at least one, and some as many as five, automobiles because they were able to bring cars to the island by boat at a reduced expense. Since the cars were not being operated on state roads, they were not taxed or licensed; in addition, the lepers didn't pay gasoline tax, and gasoline cost only 15 to 18 cents per gallon. Operating the cars gave the lepers something to do, even though there were only three miles of road on the whole peninsula.

On that Sunday, we traveled through the area and visited the small dispensary and hospital that remained. From there, we went to the theater where first-line movies were shown almost nightly. We also went to the store where one could buy almost any type of food that was available to any place in Hawaii. Finally, our driver, whose name was Harry Anaka, took us to Father Damien's church.

Harry explained that Father Damien's services had ended when he acquired leprosy from his contacts with the lepers. He and a nun in India are the only two recorded cases where leprosy was transmitted to an adult while actually caring for lepers. Father Damien's reported inattention to details of cleanliness was notorious. He smoked their pipes, cleansed their wounds, handled their discharges and obviously exposed himself on repeated occasions to the Hansen's bacillus that causes the disease.

The church that he built around the turn of the century had practically been abandoned and it, too, had been partially stripped by the lepers.

Some time prior to our visit, a group of Marines had landed on the peninsula when they delivered the foodstuffs that

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were brought by boat. The Marines traveled over the two or three square miles of the peninsula and came upon this broken-down church. A Marine sergeant, whose name has been lost in passing, decided that restoring the church would be an excellent project for him and his buddies.

The sergeant received considerable help from the able-bodied few of the lepers who were present, and he begged, borrowed and probably purloined a certain amount of equipment from U.S. government supplies. Each weekend, the Marines and the lepers would bring a boat around the island, land it, unload the materials, and work the whole weekend in restoring the siding, the pews and the pulpit of the church.

Just as we arrived at the church, this magnificent sergeant was seated on the belfry, yelling down for a supply of shingles and shingle nails. His language was rather unnerving. His use of the Lord's name was vociferous, loud, demanding and certainly somewhat in consistent with his perched position on the belfry of the church.

Upon hearing this type of verbiage, I turned to the resident priest, who was from the French-speaking area of Belgium, and spoke with him in French. I mentioned that it was rather bizarre to hear that type of language from someone perched on the roof of a church.

With tears in his eyes, the priest said, in French, that it didn't really matter how he talked or what he said because, inside, his heart was huge, his service to God was great, and the works that he was doing would be accepted when his time came to arrive in Heaven.

Seldom do I find episodes in my life that affect me. I am fairly hard-boiled, having seen and worked on many unusual medical problems, on many traumatic situations, but this was one that affected me. Even now, as I reflect on what happened that day, I get a lump in my throat.

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ISMA Bylaws Amendments

The following amendments to the ISMA Bylaws were approved by the 1985 House of Delegates. Complete copies of the updated Constitution and Bylaws, incorporating these amendments, will be made available to the 1986 House of Delegates. Complete, updated copies will also be made available to ISMA members on request.

SECTION 1.01

1.01 CATEGORIES: Categories of membership are: (1) Regular; (2) Dues Exempt; (3) Resident; (4) Medical Student; (5) Distinguished; (6) Honorary

SECTION 1.0303

1.0303 Suspension or Revocation of License: No person whose license to practice medicine has been suspended or revoked or who is under sentence of suspension or expulsion from a ~~county~~ component society, or whose name has been dropped from its roll of members, shall be entitled to any of the rights or benefits of this Association or of a ~~county~~ component society, or shall said person be permitted to take part in any of their proceedings until the license and/or component membership has been restored. This shall not apply to physicians who have surrendered their license because of retirement under the provisions of the Medical Practice Law.

SECTION 3.020101

3.020101 Voting Members: 1) Delegates or the designated Alternates, elected by the ~~county~~ component societies; 2) Trustees or the designated Alternates, 3) Speaker, 4) Vice-Speaker, 5) Past Presidents.

SECTION 3.0205

3.0205 Delegate Apportionment: Each Component county society and the Resident Medical Society shall be entitled to send to the House of Delegates each year one delegate for every fifty members and one for each major fraction thereof, but irrespective of the number of members, each component society which has made its annual report and paid its assessments, as provided in this Constitution and Bylaws, shall be entitled to one Delegate, except that where a component society is made up of physicians of more than one county each county shall be entitled to at least one Delegate and one Alternate Delegate who shall be a resident of the county represented as a Delegate and who shall be selected by the physicians residing in such county. The Student Delegate shall be seated with full power to vote. In the absence of the Student Delegate, the Alternate Student Delegate shall be seated with full power to vote.

SECTION 3.020701c (fourth paragraph)

3.020701c If the House in considering the report of the Committee on Rules and Order of Business, determines it is appropriate to consider said resolution for submission to the House and that each Delegate member shall be furnished a copy then subsection 3.020701b of these Bylaws may be suspended upon a two-thirds vote of the House of Delegates.

SECTION 3.03 (to read as follows)

3.03 MEETINGS OF ~~SPECIALTY~~ SECTIONS

3.0301 SPECIALTY SECTIONS

3.030101 Purpose ...

3.030102 Meetings ...

3.030103 Official Sections ...

(a) Allergy
(b) Anesthesia
(c) College Health Physicians
(d) Cutaneous Medicine
(e) Directors of Medical Education
(f) Emergency Medicine
(g) Family Physicians
(h) Internal Medicine
(i) Medical Directors and Staff Physicians of Nursing Facilities
(j) Neurological Surgery
(k) Neurology
(l) Nuclear Medicine
(m) Obstetrics and Gynecology
(n) Ophthalmology
(o) Orthopedic Surgery
(p) Otolaryngology, Head and Neck Surgery
(q) Pathology and Forensic Medicine
(r) Pediatrics
(s) Preventive Medicine and Public Health
(t) Psychiatry
(u) Radiology
(v) Surgery
(w) Urology

3.030104 Formation of Sections ...

3.030105 Officers ...

3.030106 Officer Elections ...

3.030107 Restriction on Meetings ...

3.030108 Failure to Comply ...

3.0302 HOSPITAL MEDICAL STAFF SECTION

3.030201 Composition: Membership in the Hospital Medical Staff Section shall be limited to ISMA members selected by physician members of the medical staffs from each licensed hospital in the state of Indiana.

3.030202 Organization: The organization of the Hospital Medical Staff Section shall consist of an Executive Committee, which shall consist of the chairman, vice-chairman, secretary/treasurer, 2 members at large and the delegate and alternate delegate to the ISMA House of Delegates, with duties as may be prescribed in the Hospital Medical Staff Section Bylaws.

SECTION 4.0301 (last paragraph)

4.0301 ... Unless otherwise specified in the Bylaws, ex-officio, the President shall be a member, without vote, of all commissions, committees and the Board of Trustees.

SECTION 5.01

5.01 COMPOSITION/VOTING POWER: The Board of Trustees shall consist of: 1) The Trustees with power to vote and their duly elected Alternates, each of the latter without power to vote except when the Trustee is not in attendance; ~~and~~ 2) ex-officio, the President, the President-Elect, Treasurer, Immediate Past President, all with power to vote, Assistant Treasurer without power to vote except in case the Treasurer is not in attendance, and (3) the Speaker, Vice Speaker, ~~the~~ Trustee (or the alternate) ~~from~~ and elected by the Resident Medical Society, and Executive Director all without power to vote.

SECTION 17.01

17.01 BYLAWS AMENDMENTS: These Bylaws may be amended by resolution, as in 3.020701b, which shall be treated as any other proposed amendment, at any meeting of the House of Delegates by a majority vote of all the ~~Delegates~~ voting members present. Amendments to the Bylaws must be submitted to the Association 45 days in advance of the meeting. These amendments must be presented to the Commission on Constitution and Bylaws prior to the meeting and are eligible for passage after lying on the table for one day.

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MATERNAL MORTALITY IN INDIANA: A REPORT OF MATERNAL DEATHS IN 1984

The following is the annual report of the Indiana Maternal Mortality Study Committee. A total of eight maternal deaths occurred in 1984. That year Indiana recorded 79,883 live births. This gives the state an official maternal mortality rate of 6.2 deaths per 100,000 births for 1984.

The Committee met in open session at Grand Rounds at Wishard Memorial Hospital on June 5, 1985. The function of the Indiana Maternal Mortality Study Committee was reviewed and updated statistics were presented. Several of the 1984 death summaries were discussed by the group. The subject of amniotic fluid embolism was presented in depth.

The Committee adjourned to the Student Union Building for a closed discussion of the eight 1984 deaths. Each case was presented for discussion, establishment of diagnosis, and assignment with regard to preventability and responsibility.

Case #760 was a 23-year-old at 20 weeks gestation. Cause of death was infection. Septic late abortion. Septic shock. *Case #761* was a 34-year-old, G1,PO, at 25 weeks gestation. Diagnosis was hemorrhage. Ruptured cornual pregnancy. The patient had refused to receive blood on religious grounds. *Case #762* was a 28-year-old, G2, P1, at 8 weeks gestation. Cause of death was hemorrhage. Ruptured tubal pregnancy. *Case #763* was a 36-year-old, G3, at 41 weeks gestation. Cause of death was amniotic fluid embolism. *Case #764* was a 31-year-old, G4, at 38 weeks gestation. Cause of death was hypertension with superimposed eclampsia. *Case #765* was a 28-year-old, G2, P1, at 37 weeks gestation. Cause of death was hemorrhage. Preeclampsia, disseminated intravascular coagulation, and uterine atony. *Case #766* was a 35-year-old at 6-8 weeks gestation. Cause of death was ruptured tubal pregnancy. *Case #767* was a 26-year-old, G2, at 8-10 weeks gestation. Cause of death was drug overdose.

Maternal mortality is still with us. While numbers are small, the Committee feels that it is important to investigate and report these deaths for statistical and educational purposes.[1] Undoubtedly, there are many "near misses." According to our records, 50-75% of these deaths are preventable or have preventable factors.

Three of the 1984 deaths were due to ruptured ectopic pregnancy. Nationwide, we are seeing an increased number of ectopic pregnancies. Early diagnosis is now possible with sensitive pregnancy tests and ultrasound. Hopefully, maternal mortality due to this condition will decrease.

According to several recent studies,[2-5] there appears to be a changing trend with regard to the causes of maternal mortality. Deaths due to toxemia of pregnancy and pulmonary embolism have remained static during study periods, including our own here in Indiana. Deaths due to toxemia may represent a low standard of prenatal care, and improvement in this area should occur. Deaths due to pulmonary embolism remain an enigma, probably because early recognition and prevention can be difficult.

There is a continuing collaborative effort on the part of the American College of Obstetricians and Gynecologists to summarize maternal deaths by states and districts. These increased numbers will provide more meaningful statistics to continue to curtail preventable maternal mortality.

This report was prepared by William D. Ragan, M.D., Professor, Ob-Gyn, Indiana University School of Medicine, and Chairman, Maternal Mortality Study Committee.

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5. Maternal mortality: Pilot surveillance in seven states. CDC *Morbidity and Mortality Weekly Report*, 34(47), Nov. 29, 1985.

PHYSICIAN'S GUIDE TO INDIANA LAW AVAILABLE

Copies of the "Physician's Guide to Indiana Law" are available from ISMA headquarters at a cost of $4.00 each. The May 1, 1986 supplement to the Guide is printed in this issue of INDIANA MEDICINE as an insert. The original Guide was published in the March 1986 issue of INDIANA MEDICINE.

The Guide highlights certain aspects of Indiana law that relate to medical practice, including abortion, adult and child abuse, anatomical gifts, confidential patient information, consent to treat, expert witness, grounds for discipline, immunity to suit, licensure, living will, malpractice, peer review and reporting requirements.

Checks, payable to the Indiana State Medical Association, should be sent to ISMA headquarters, 3935 N. Meridian St., Indianapolis, Ind. 46208.

PHYSICIAN'S GUIDE TO INDIANA LAW

Supplement May 1, 1986



PHYSICIAN'S GUIDE TO INDIANA LAW

Supplement, May 1, 1986

This Supplement is an update of the PHYSICIAN'S GUIDE TO INDIANA LAW, which was published October 1, 1985. It includes the changes that have been made to the laws discussed in the main issue of the PHYSICIAN'S GUIDE TO INDIANA LAW. Only certain topics were the subject of change since October 1, 1985. The reader should first locate a subject of interest in the Supplement to see if it has been changed. If a subject is not listed in the Supplement, the reader should refer to the main issue.

The statutes and rules cited are those in effect as of May 1, 1986. Since amendments occur frequently, and excerpts can be misinterpreted when viewed in isolation, the full text of a relevant code section or rule should always be consulted. Physicians are advised to consult a lawyer knowledgeable in health care law for answers to specific questions.

NOTE: Throughout the text of this booklet, and where context admits, the singular shall imply both the singular and plural. Also, masculine pronouns shall imply both the masculine and feminine. The abbreviations IC and IAC refer to the Indiana Code and the Indiana Administrative Code, respectively.

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ANATOMICAL GIFTS

"Any individual of sound mind and eighteen (18) years of age or more may give all or part of his body for any purpose . . . the gift to take effect upon death." **IC 29-2-16-2(a).** If a deceased person has not made a gift, other persons may make a gift of the deceased person's body in whole or in part, in the following order of priority: 1) the decedent's spouse, 2) the decedent's adult sons or daughters, 3) either of the decedent's parents, 4) an adult brother or sister of the decedent, 5) a guardian of the decedent at the time of his death, or 6) any other person authorized or under obligation to dispose of the body. If a member in the same or higher priority objects to a donation, no gift shall be made. **IC 29-2-16-2.** Any physician, hospital, medical or dental school, organ bank, or specified individual for transplantation needed by him may receive an anatomical gift. **IC 29-2-16-3.**

An anatomical gift may be made by will, document, or a card designed to be carried on the person of the donor. The card or document must be signed by the donor and two witnesses. **IC 29-2-16-4.** The back of all Indiana drivers' licenses have a form for making a gift of organs.

The physician attending the donor at death shall certify the time of death, but shall not participate in the procedures for removing or transplanting a part. **IC 29-2-16-7.**

A hospital administrator or his designee must inform a person available from the highest class of persons listed above "of the procedures available . . . for making a gift whenever:

(1) an individual dies in a hospital;

(2) the hospital has not been notified that a gift has been authorized . . .; and

(3) a physician determines that the individual's body may be suitable of yielding a gift."

The fact that the required information was given to the decedent's representative must be recorded in the decedent's medical record. **IC 29-2-16-10.**

See also: **EYE ENUCLEATION.**

CONSENT TO TREAT

Indiana requires, as do most other states, that a patient give "informed consent" before a physician may treat. Without "informed consent", a physician may be liable for treating a patient in a negligent manner.

To make a patient's consent "informed," a physician must "make a reasonable disclosure of material facts relevant to the decision which the patient is requested to make." *Revord v. Russell*, 401 N.E.2d 763,766 (Ind. App. 1980). A reasonable disclosure of relevant facts includes explaining 1) the risks of the suggested treatment, 2) alternatives to the suggested treatment, and 3) the risks involved if the condition is left untreated.

A physician need not make an endless list of all risks including those which occur only infrequently. He must, however, disclose those risks which a reasonable physician would have disclosed under the same or similar circumstances. *Revord*. In addition, a patient may not say a physician was negligent because he failed to obtain "informed consent" if it can be shown that the patient would have consented to the treatment if he had been adequately informed.

Questions about consent frequently arise where the patient is incompetent or is not an adult. If a patient is under the age of eighteen (18), one parent who has custody may consent to the minor's treatment. If there is no parent, a legal guardian or a juvenile court must give consent before the minor can be treated. **IC 16-8-3-1(a)(1).** If a minor is married, he can give consent for his own treatment. **IC 16-8-4-1.** If a patient has been adjudged incompetent, his legal guardian may consent to treatment, or the superintendent of the institution where he is committed may give consent to treat under the requirements of **IC 16-8-3-3** (which include a second opinion and notification of any known relatives or friends of the patient). **IC 16-8-3-1(a)(3).** An emancipated minor may consent to his own treatment. **IC 16-8-3-1(a)(2).** A minor may consent to treatment of a venereal disease without consent of a parent. **IC 16-8-5-1.**

As a general rule of law, if a person is unconscious and no one is available who is legally authorized to act as agent for the patient, a physician has implied consent to deliver medical services necessary to prevent serious bodily injury or loss of life. Consent is "implied" only in an emergency where time is of the essence. Prosser on Torts, Consent § 18 (1984 5th Ed.).

See also **ABORTION, COMMITMENT OF MENTALLY ILL PERSONS,** and **LIVING WILL.**

CONTROLLED SUBSTANCES

Under **IC 35-48-3-3(a),** "Every person who manufactures, distributes any controlled substance within this state . . . must obtain biennially a registration issued by the [Indiana State] board [of Pharmacy] in accordance with its rules.

(b) Every person who dispenses or proposes to dispense any controlled substance within Indiana must have a registration issued by the [Indiana State] board [of Pharmacy] in accordance with its rules. A registration issued to a dispenser under this subsection expires whenever the license as a practitioner expires. The board shall renew a dispenser's registration under this subsection concurrently with any state license authorizing the dispenser to act as a practitioner."

In addition, "persons registered to manufacture, distribute, or dispense controlled substances . . . shall keep records and maintain inventories in conformance with the record keeping and inventory requirements of federal law and with any additional rules the [Indiana State] board [of Pharmacy] issues." **IC 35-48-3-7.** The address of the Indiana State Board of Pharmacy is: 964 North Pennsylvania, Indianapolis, Indiana 46204, (317) 232-2960.

Controlled substances are classified in five categories according to the following criteria:

Schedule I - high potential for abuse; no accepted medical use in treatment in the United States; or lacks accepted safety for use in treatment under medical supervision. **IC 35-48-2-3.**

Schedule II - high potential for abuse; currently accepted medical use in treatment in the United States; currently accepted medical use with severe restrictions; and abuse may lead to severe psychic or physical dependence. **IC 35-48-2-5.**

Schedule III - potential for abuse less than the substances listed in Schedules I and II; currently accepted medical use in treatment in the United States; and abuse may lead to moderate or low physical dependence or high psychological dependence. **IC 35-48-2-7.**

Schedule IV - low potential for abuse relative to substances in Schedule III; currently accepted medical use in treatment in the United States; and abuse may lead to limited physical or psychological dependence relative to the substances in Schedule III. **IC 35-48-2-9.**

Schedule V - low potential for abuse relative to substances listed in Schedule IV; currently accepted medical use in treatment in the United States; and has limited physical or psychological dependence relative to the substances in Schedule IV. **IC 35-48-2-11.**

Drugs in Schedule I may not be prescribed or dispensed unless the practitioner is specifically entitled to do so in his registration with the State Board of Pharmacy. **IC 35-48-3-4(b).** Schedule II drugs must either be dispensed directly by a practitioner other than a pharmacist or it may be dispensed pursuant to a written prescription of a practitioner. If an emergency exists, a Schedule II drug may be dispensed pursuant to an oral prescription which is promptly reduced to writing. Schedule II prescriptions may not be refilled. **IC 35-48-3-9.**

Schedule III or IV drugs may be dispensed directly by a practitioner other than a pharmacist, or pursuant to an oral or written prescription. Drugs in Schedules III and IV may be refilled up to five (5) times within six (6) months of the date of prescription. **IC 35-48-3-9(c).**

Drugs in Schedule V may be dispensed by a pharmacist licensed by the State Board of Pharmacy who maintains an exempt narcotic register. Practitioners may also dispense or prescribe Schedule V drugs. **IC 35-48-3-9(d); IC 35-48-4-7(b).**

It is unlawful to sell or possess controlled substances unless under the laws mentioned above. The penalties for unlawful sale or possession of controlled substances vary depending on amounts and classifications of the drugs, and the culpability involved. See **IC 35-48-4-1** *et seq.*

See also **GENERIC DRUG SUBSTITUTION.**

DEFINITION OF DEATH

Indiana has adopted the Uniform Definition of Death Act, which states:

"Only an individual who has sustained either:

(1) irreversible cessation of circulatory and respiratory functions; or

(2) irreversible cessation of all functions of the entire brain, including the brain stem;

is dead. A determination of death must be made in accordance with accepted medical standards." **IC 1-1-4-3.**

DETERMINATION OF NEED (Health Planning)

Indiana's health planning law requires that certain expenditures for major equipment or hospital construction be approved by the State Board of Health. The purpose is to ensure that health facilities do not make investments which duplicate existing resources or create excess capacity.

A health care facility must obtain a determination of need from the State Board of Health for every "capital expenditure" in excess of $1,000,000, **IC 16-1-3.7-1,** and every purchase of "major medical equipment" that costs more than $1,000,000, **IC 16-1-3.7-3**. A capital expenditure which does not increase the bed capacity of a facility need not be reviewed by the State Board. In addition, no review is needed when capital expenditures of purchases of major medical equipment are made for a health care facility, including a physician's office, which has no inpatient services. **IC 16-1-3.7-2.**

A determination of need is required for capital expenditures which convert existing beds to long-term care beds. **IC 16-1-3.7-1(2)(c)**. A hospital may convert, however, thirty acute care beds to skilled beds, and fifteen acute care beds in 1986 and fifteen acute care beds in 1987 to long-term care beds by giving ninety days notice to the State Board of Health. **IC 16-1-3.7-9**.

In making a determination of need, the State Board of Health shall review the availability of alternative resources, the impact of the expenditure on the cost of health care in the community, health care market conditions, the effects of the expenditure on existing utilization review, quality assurance and cost containment programs, and the competitive factors of the free enterprise system. **IC 16-1-3.4-4**.

The State Department of Public Welfare shall determine whether the proposed capital expenditure which converts beds to long-term care beds is considered reimbursable under the federal Medicaid program. **IC 16-1-3.7-7(c)**. The State Board of Health shall determine the reimbursability of all other projects subject to review. **IC 16-1-3.7-7(d)**.

EMERGENCY MEDICAL TECHNICIAN (EMT)

"'Emergency medical technician' means an individual who is certified . . . to provide emergency medical care at the scene of an acident, illness, or during transport.

'Emergency medical care' means the following:

(1) Assessment of emergency patients.
(2) Administration of oxygen.
(3) Utilization of mechanical breathing devices.
(4) Application of anti-shock trousers.
(5) Performance of cardiopulmonary resuscitation.
(6) Application of dressing and bandage materials.
(7) Application of splinting and immobilization devices.
(8) Utilization of lifting and moving devices to ensure safe transport.
(9) Other procedures authorized by the commission.

The term [emergency medical care] does not include invasive medical care techniques or advanced life support." **IC 16-1-39-2**.

The EMT must have completed an Indiana Emergency Medical Services Commission approved basic training course and hold a valid certificate issued by the EMS Commission. **IC 16-1-39-9.** See also: **ADVANCED EMERGENCY MEDICAL TECHNICIAN** and **PARAMEDIC.**

LICENSURE

IC 25-22.5-3-1 provides: "(a) The minimum requirements of all applicants for an unlimited license to practice medicine or osteopathic medicine in Indiana must include but are not limited to the requirements prescribed by this section.

(b) The applicant must not have a conviction for:

(1) An act which would constitute a ground for disciplinary sanction under **IC 25-22.5-6-2.1(b)**; or
(2) A crime that has a direct bearing on the applicant's ability to practice competently.

(c) The applicant shall possess the degree of doctor of medicine or doctor of osteopathy or its equivalent from a medical school which was approved by the board as of the time the degree was conferred.

(d) The applicant shall have successfully passed the examination for licensure or shall have satisfied the requirements for licensure by endorsement as prescribed by the board.

(e) The applicant shall be physically and mentally capable of safely engaging in the practice of medicine or osteopathic medicine and shall submit to an examination if deemed necessary by the board to determine such capability.

(f) The applicant shall not have had disciplinary action taken against the applicant or the applicant's license by the board or by the licensing agency of any other state or jurisdiction by reasons of the applicant's inability to safely practice medicine or osteopathic medicine and those reasons are still valid in the opinion of the board.

(g) The applicant shall have submitted a complete transcript of his educational records, grades, and diploma from his medical school with an English translation thereof.

(h) The applicant shall, at the board's discretion, make a personal appearance before it.

(i) The applicant shall have completed one (1) year of postgraduate training in a hospital or institution located in the United States, its possessions, or Canada that meets standards set by the board. . . ."

There are special requirements for foreign medical graduates. **IC 25-22.5-3-2** provides: "In addition to meeting all the requirements of section 1 (25-22.5-3-1) of this chapter, except subsection (i), an applicant for licensure who:

(1) has been graduated from a medical school outside the United States, its possessions, or Canada; and

(2) submits evidence satisfactory to the board that prior to passing the examination the applicant has successfully completed a minimum of at least two (2) years of postgraduate training in a hospital or institution located in the United States or Canada which meets the standards approved by the nationally recognized medical or osteopathic accrediting bodies in the United States, for the purpose of graduate training which is approved by the board;

is entitled to receive an unlimited license to practice medicine or osteopathic medicine."

All licenses expire on June 30 of each even-numbered year. Licenses can be renewed by paying a biennial renewal fee of $40. **IC 25-22.5-7-1; 844 IAC 4-2-1.**

A person who practices medicine without a license commits a Class C felony. A person who practices midwifery without a license or who acts as a physician's assistant without registering with the Medical Licensing Board commits a Class D felony. **IC 25-22.5-8-2.**

See also: **CONTROLLED SUBSTANCES.**

MEDICARE

The federal government will reimburse persons over the age of 65 for the care they receive in a hospital based on a prospective payment system. This program is available to all persons over the age of 65 and is not based on need. Those persons wishing to receive reimbursement for physician services must purchase additional insurance under the Medicare - Part B program. Each state administers the Medicare program locally for the federal government. Indiana has contracted with Blue Cross-Blue Shield of Indiana to administer the program in Indiana.

Due to the complexity of the Medicare program, further explanation of the statutes and rules in this reference guide is impractical. For questions regarding the Medicare program in Indiana please call 317-842-4151.

REPORTING REQUIREMENTS

"It shall be the duty of all physicians to immediately report to the health officer designated by the [Indiana] State Board [of Health] all cases under his care of communicable diseases which are required to be reported by the rules of the state board." **IC 16-1-9-2.** The following diseases must be reported to the State Board of Health at 317-633-8414 or to the local health officer.

Acquired Immune Deficiency Syndrome (AIDS)
Amebiasis
Animal Bites
Anthrax
Botulism
Brucellosis
Campylobacter Enteritis
Cholera
Diphtheria
Diarrhea of Newborn
Encephalitis, Acute Infectious
Food Poisoning
Giardiasis
Hepatitis, Viral Non A, Non B
Hepatitis, Viral, Type A
Hepatitis, Viral, Type B
Herpes, Neonatal
Histoplasmosis
Legionellosis
Leprosy (Hansen's Disease)
Malaria
Measles (Rubeola)
Meningitis, Aseptic
Meningitis, Meningococcal and other Meningococcal Disease
Meningitis, Other Bacterial
Mumps
Ophthalmia Neonatorum, Gonococcal
Pertussis
Poliomyelitis
Psittacosis
Rabies
Reyes Syndrome
Rocky Mountain Spotted Fever
Rubella (German Measles)
Rubella Congenital Syndrome
Salmonellosis, other than Typhoid Fever
Shigellosis
Smallpox
Tetanus
Toxic Shock Syndrome
Trichinosis
Tuberculosis
Tularemia
Typhoid Fever
Typhus, Endemic (flea-borne)
Typhus, Epidemic (louse-borne)
Yellow Fever

410 IAC 1-2-2.

By statute, all confirmed cases of Acquired Immune Deficiency Syndrome (AIDS) must be reported directly to the State Board of Health. **IC 16-1-9-19.** All cases of venereal disease, including chancroid, gonorrhea, granuloma inguinale, lymphogranuloma, and syphilis, must be reported directly to the Division of Communicable Disease Control, Indiana State Board of Health, Indianapolis, Indiana 46206 or 317-633-8414. **410 IAC 1-2-2.**

The following diseases must be reported to the local health officer, but need not identify the patient, age, sex, race, date of onset or name of physician unless specifically requested by the health officer:

Chickenpox
Conjunctivitis (Pink Eye)
Impetigo
Influenza
Pediculosis (Lice)
Rheumatic Fever
Scabies
Streptococcal Infections (Scarlet Fever, Streptococcal Sore Throat, Erysipelas)
Tinea Capitis (Ringworm of Scalp)

410 IAC 1-2-2.

There are several other incidents which must be reported. All cases of newly diagnosed blindness must be reported to the Indiana State Board of Health. **IC 16-4-5-1.** Each confirmed case of cancer must be reported to the cancer registry set up by the Indiana State Board of Health. This requirement may also be satisfied by reporting to an existing public or private cancer registry. **IC 16-4-9-4.** Each confirmed case of a birth problem (birth defects, stillbirths, or low birth weight) must be reported to the birth problems registry set up by the State Board of Health. This requirement may be satisfied by reporting to an existing public or private birth problems registry.

IC 16-4-10-7. Wounds and injuries from firearms, knives, ice picks or other sharp pointed instruments, or powder burns must be reported to local law enforcement authorities. Failure to report these injuries constitutes a Class A misdemeanor. **IC 35-47-7-1.** A physician must report to the State Board of Health all cases where he diagnoses, treats or cares for an individual having a handicap or a handicapping condition. **IC 16-4-6-3.** All cases of neglect, abuse or maltreatment of mentally ill persons under the care of the psychiatric hospital must be reported within twenty-four (24) hours to the head of the hospital. **IC 16-14-1-2.**

Infants must be examined for the following conditions and the test results must be reported to the State Board of Health:

- Galactosemia
- Hemoglobinopathies, including Sickle Cell Anemia
- Homocystinuria
- Hypothyroidism
- Inborn Errors of Metabolism that result in Mental Retardation
- Maple Syrup Urine Disease
- Phenylketonuria

IC 16-8-6-1 and 16-8-6-5.

Under the authority of **IC 25-22.5-2-7(8)**, the Medical Licensing Board promulgated a rule, **844 IAC 5-1-2(g)(1)**, which states: "A practitioner who has personal knowledge based upon a reasonable belief that another practitioner holding the same license has engaged in illegal, unlawful, incompetent or fraudulent conduct in the practice of medicine or osteopathic medicine shall promptly report such conduct to a peer review or similar body . . . having jurisdiction over the offending practitioner and the matter. This provision does not prohibit a practitioner from promptly reporting such conduct directly to the medical licensing board. Further, a practitioner who has personal knowledge of any person engaged in, or attempting to engage in, the unauthorized practice of medicine or osteopathic medicine shall promptly report such conduct to the medical licensing board."

For other reporting requirements, please see **ABORTION, ADULT ABUSE, BIRTH CERTIFICATES, CHILD ABUSE, CONFIDENTIAL PATIENT INFORMATION, DEATH REPORTS, LIVING WILL, SEX CRIMES,** and **VENEREAL DISEASE.**

VENEREAL DISEASE

All persons intending to be married must undergo a physical examination by a physician, which includes a serological test for the presence of syphilis. **IC 31-7-4-2(a).** "A physician who diagnoses a pregnancy of a woman shall take or cause to be taken a sample of blood at the time of diagnosis and shall submit the sample to an approved laboratory for a standard serological test for syphilis." **IC 16-1-11-12.** The person who is in attendance at a birth must examine the infant's eyes for infection and administer any appropriate treatment. **IC 16-1-11-5.** "It shall be unlawful for any person in professional attendance at a birth to fail to include an answer to the question on a birth certificate: 'were precautions taken against ophthalmia neonatorum?'" **IC 16-1-11-7.**

See also **CONSENT TO TREAT** and **REPORTING REQUIREMENTS.**

CME QUIZ

TO OBTAIN ONE HOUR OF CATEGORY 1 AMA CME CREDIT, answer the following questions by circling the correct answer on the answer sheet below. Complete and clip the application form and mail it to: Indiana University School of Medicine, CME Division, BR 156, 1226 W. Michigan St., Indianapolis 16223.

Mammography

CONTINUED FROM PAGES 749-752

1. The probability of a woman in the United States developing breast cancer is which of the following:
   a. One in eight.
   b. One in 11.
   c. One in 18.
   d. One in 23.
2. Which of the following statements is true?
   a. The prognosis for all stages of breast cancer showed significant improvements in the decade, 1970-79.
   b. Chemotherapy has been shown to improve the survival rate of all patients with metastases to nodes if distant spread is not clinically apparent.
   c. Several large studies have shown that the earlier a breast cancer is detected, the better the chances of survival.
   d. Earlier detection does not appear to be associated with improved survival.
3. Which of the following statements about xeromammography is *not* true?
   a. The image is formed on an aluminum plate coated with selenium.
   b. The patient receives one-third to one-half the dose of radiation required in film/screen mammography.
   c. It images more of the chest wall than film/screening mammography.
   d. Reading the image does not require an illuminated view box.
4. Which of the following statements about interpretation of x-ray mammographic images is *not* true?
   a. Images of breasts with a large amount of fat are relatively easy to read.
   b. Images of breasts with a large amount of fibroglandular tissue are the most difficult to interpret.
   c. The radiographic densities of fibroglandular tissue and most breast cancers are the same.
   d. Microcalcifications are the only sign of clinically occult breast cancer.
5. In a patient with a clinically palpable breast mass, the false-negative rate of the best mammographic technique is approximately:
   a. 1% or less.
   b. 2-4%.
   c. 8-10%.
   d. 12-15%.
6. In asymptomatic patients with small mammographically suspicious lesions, true-positive rates for malignancy are in the following range:
   a. 5-8%.
   b. 10-40%.
   c. 50-60%.
   d. 80-90%.
7. Which of the following statements concerning the dose of radiation received from x-ray mammography is *not* true?
   a. This technique is not recommended for screening of women under age 35 years because their breasts are more sensitive to radiation than those of older women.
   b. There are no good data to accurately determine the risk of inciting breast cancer from current mammographic techniques.
   c. Current techniques of xeromammography and film/screen mammography produce the same radiation dose.
   d. In most cases, the risk from radiation of mammography is probably less than the risk of driving to and from the facility to obtain the examination.

CONTINUED ON PAGE 824

AUGUST CME QUIZ Answers

Following are the answers to the CME quiz that appeared in the August 1986 issue: "Radiation Therapy and Non-Small Cell Lung Cancer: Current Perspectives," by Joseph F. Montebello, M.D.

1. d
2. c
3. d
4. d
5. d

Answer sheet for Quiz: (Mammography)

1. a b c d	6. a b c d
2. a b c d	7. a b c d
3. a b c d	8. a b c d
4. a b c d	9. a b c d
5. a b c d	10. a b c d

I wish to apply for one hour of category 1 AMA Continuing Medical Education credit through the I.U. School of Medicine. I have read the article and answered the quiz on the answer sheet above. I understand that my answer sheet will be graded confidentially, at no cost to me, and that notification of my successful completion of the quiz (80% of the questions answered correctly) will be directed to me for my application for the Physician's Recognition Award of the American Medical Association. I also understand that if I do not answer 80% of the questions correctly, I will not be advised of my score but the answers will be published in the next issue of INDIANA MEDICINE.

Name (please print or type)

Address

Identification number (found above your name on mailing label)

Signature

To be eligible for this month's quiz, send your completed, signed applicatation before Oct. 10, 1986 to the address appearing at the top of this page.

EDITORIALS

Anti-Smoking Campaign: Getting Doctors Involved

This fall, ISMA's Public Relations and Government Affairs departments will begin an active campaign concerning the dangers of tobacco use. It is vital that every physician become involved with this effort.

Why? First, look at the Hippocratic Oath. It states, "I will prescribe regimen for the good of my patients according to my ability and my judgment. . . ."

The nicotine in tobacco products is a deadly drug. It is more addictive than alcohol or heroin and kills more Americans than any other personal health habit or any other environmental hazard.

In 1964 when the first Surgeon General's Report on Tobacco and Health came out, tobacco was known to be responsible for at least 250,000 deaths a year. Now the figure has reached 485,000 and doubtless will continue to grow as long as people use cigarettes and tobacco as much as they do.

Nearly a third of all deaths in the U.S. are caused by addicting substances: 5% from alcohol; 2% from illegal drugs; and 25% from tobacco, which makes it five to 12 times worse as a killer.

As physicians, we could be failing to "prescribe regimen for the good" by not urging patients to quit smoking. Think of the impact we could have on this state and this nation if we could persuade all of our patients to quit smoking.

Also as physicians, we need to be more responsible for the health of the general public. One very effective method to carry out this responsibility is to become aware and involved in your state legislature and the legislative efforts of ISMA.

Presently, ISMA's legislative efforts will encompass legislation that will restrict or ban smoking in government buildings. Last year a bill to restrict smoking in state-owned facilities died by one vote. If every physician contacted his or her state legislator, this piece of legislation would pass.

Another legislative effort is to support bills that would increase the tax on the sale of tobacco. Currently, the revenue from cigarette sales is being used for unrelated purposes. An increase in tax would not only further discourage smokers, but allow some monies to be designated for related programs such as those to help people quit smoking.

Because tobacco use among teenagers is at an all time high, ISMA will support legislation that would raise the minimum age for tobacco sales and stiffen the penalty for violating the law. Raising the minimum age for tobacco sales to 21, and increasing the penalty to an infraction with a fine would discourage many young people from buying tobacco products.

Our greatest battle in conquering this deadly product is in educating legislators and the general public. Public awareness of the dangers of tobacco use and the support of ISMA's legislative efforts are essential if we are to achieve a "tobacco-free" society by the year 2000.

Gift Subscriptions to INDIANA MEDICINE

Many people outside the medical profession, all friends of medicine and advocates of good medical care, would enjoy and profit from reading INDIANA MEDICINE.

Newspaper editors, newspaper staff people, civic leaders, judges, lawyers, teachers, personal friends, medical school classmates practicing outside Indiana, relatives, elected legislative representatives and pastors—all would or should belong to this host of supporters of good medical education, good clinical practice, and topnotch public health.

We can't just arbitrarily send so-called complimentary subscriptions to everyone. Postal regulations allow INDIANA MEDICINE to be mailed at the special non-profit Second Class rates authorized for scientific publications as long as the majority of copies are mailed to legitimate paid subscribers. We use most of our "complimentary" allotment for exchange subscriptions with others journals of medicine and, after reviewing those publications, we offer the copies to the I.U. School of Medicine medical library.

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If you'd like to arrange a gift subscription for someone, send us a letter stating the name and address of the recipient, the name of the donor, and a check for $20, payable to INDIANA MEDICINE.

We will notify each beneficiary and identify the donor unless this is not desired. We will also catalog all the beneficiaries in order not to duplicate gift subscriptions.

The custom of gift subscriptions was originated by *The Journal of the Oklahoma State Medical Association*, whose leadership we are privileged to follow.

Pre-1928 Films Wanted

Letter to the Editor

For a book to be entitled *Bringing Medicine to the Masses*, I am trying to locate any surviving medical or health-related motion pictures produced prior to 1928.

I am particularly interested in finding films made for lay audiences on such topics as hygiene, nutrition, TB, VD, child care, eugenics, etc. I would also appreciate hearing from anyone who remembers seeing such films in school, in the Army, or in theaters, before 1928, and from anyone who knows of specific references to such films in published or unpublished literature and documents from the pre-1928 period.—**Martin S. Pernick, Associate Professor, Dept. of History, The University of Michigan, Ann Arbor, Mich. 48109.**

Bargain Basement Medicine

Guest Editorial

Who is it that can't remember spotting a good thing in the bargain basement of some department store? In some ways bargain basements are as American as apple pie. They are certainly a part of the American merchandising system.

Medical services are being merchandised today very much in the same way as shoes or underwear or overcoats are merchandised. With this in mind it should not be considered in any way remarkable that the medical merchants have their bargain basements too. These, of course, are the HMOs.

There is nothing wrong with shopping at Macy's or Gimbels' basement. Some people wouldn't enjoy shopping, others couldn't afford to shop, if there were no bargain basements. Some people are fascinated with the goods on display in Medicine's bargain basement and others are convinced they can't afford the things upstairs.

Artful merchandisers manage to appeal to the varying tastes, desires and pocket books of a multitude of shoppers. Gimbels does not just hang up the Penthouse sign in its basement and hope for the best. Some merchants of medical service, perhaps through lack of experience, are not quite as artful as their department store cousins. Some just hang up the Penthouse sign and some of their customers are only too happy to believe it.

That is fraudulent, of course, and it is wrong. There is nothing wrong with the services that an HMO provides just as there is nothing wrong with the goods in the bargain basement. HMOs provide needed and valuable services to a portion of the patient population but those who merchandise these services should not commit fraud in the process.

HMOs provide a system of allotting and controlling medical services. Because certain specialists, certain equipment, certain resources are put on display via the brochures does not guarantee their appropriate use or even their availability. Disappointment is a frequent phenomenon voiced by new HMO enrollees.

A recent Rand Corporation study comparing health outcomes between patients treated by HMOs and others by traditional fee-for-service plans reported in AM NEWS revealed some startling findings. One is that those in a low income category fared better in the fee-for-service plan than a comparable group in an HMO. One would have predicted the opposite. There was also the suggestion that it was not necessarily less expensive for any government program to require mandatory HMO coverage for its medically indigent population.

HMOs have a place in the medical care system but the specific niche they should finally occupy has yet to be firmly outlined.—**Stephen D. Ward, M.D., Editor, West Virginia Medical Journal**

Reprinted with permission from the *West Virginia Medical Journal*, July 1986.

Smokeless Tobacco

Following is a synopsis of a recent National Institutes of Health Consensus Development Conference Statement on the "Health Implications of Smokeless Tobacco Use."

Smokeless tobacco includes both chewing tobacco and snuff. Estimates suggest at least 10 million Americans used smokeless tobacco within the past year; of that number, 3 million were under 21 years of age.

The use of smokeless tobacco declined for many years but market data now suggest there is a rapid rise in the use of snuff, especially by very young students in schools.

The fear, of course, is a rapid rise in the incidence of oral cancer, especially in young males. One study from North Carolina found the incidence of oral cancer was 4.2 times higher than those using snuff as compared with non-users.

Carcinogens, especially nitrosamines, are present in smokeless tobaccos, yet a direct relationship between the use of smokeless tobacco and cancer of the mouth in animals has not been verified.

Smokeless tobaccos seem to produce the same dependence and addiction as that found in smokers. Withdrawal produces the same unpleasant symptoms in both smokers and users of smokeless tobacco.

The great fear is a marked rise in cancer of the mouth with frequent long-term use of smokeless tobacco. As rapidly as accurate data are available, such information will be published so users may be warned if the dangers truly exist.—**I.E. Michael, M.D., Indianapolis**

The Common Gender

Commentary

When I was a grade school student, I went to a Polish elementary school. There we learned the three R's, but we also took Polish reading and history that taught not only the many contributions of George Washington, but also of Kościuszko. The diagramming of English sentences was pounded into us. And we learned that there were four genders: masculine, feminine, common, and neuter.

Since I graduated from that school, run by the good Sisters of Notre Dame, I have never met the common gender in a school or seminar again. But it is a useful concept.

If one doesn't know the sex of the person, it is the common gender, and takes the masculine endings.

So a salesman stays a salesman, whether the person is a man or a woman. A draftsman remains the proper way of spelling this skilled person's job, whether the skilled person is a man or a woman. No need to say draftsperson as is required nowadays in the United States. And of course, a manhole stays a manhole, no matter who goes down it.

This teaching of a common gender is out of phase with current American legal, political, and feminist doctrine, I admit. But these current absurdities that are being forced upon our language by law can't endure for long. We know instinctively that when we say "man," we are also including "woman," for after all, man embraces woman.—**Richard J. Noveroske, M.D., Newburgh**



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AUXILIARY TO HOST NASA ASTRONAUT AT CONVENTION LUNCHEON

Convention plans are well underway for a weekend filled with educational and entertaining activities for physicians and their spouses. The convention will be held at the Hyatt Regency in Indianapolis, Oct. 30 to Nov. 2.

Physicians and their families will enjoy meeting U.S. Navy Captain Donald E. Williams, a NASA astronaut who will be our guest speaker at our luncheon on Saturday, Nov. 1.

Captain Williams, 44, was born in Lafayette, Ind., and is a 1964 graduate of Purdue University. He piloted the fourth flight of Discovery, the ship used on the 16th Shuttle mission, which was launched from the Kennedy Space Center April 12, 1985. He returned to Earth seven days later after the deployment of two satellites, an unscheduled EVA in an attempt to activate one of the satellites that had failed, a series of medical experiments, two student experiments, activation of two Getaway Specials, filmed experiments with toys in space, 168 hours of orbital operations, and 109 orbits of Earth.

Those of you with children are welcome to bring them along to meet Captain Williams.

The Hospitality Area this year will be centrally located, right in the middle of Celebration Hall, among the exhibitors. We look forward to seeing you at breaks to relax and enjoy the snacks.

The IMPAC reception/luncheon on Friday will feature, as guest speakers, Rob Bowen and Evan Bayh, sons of Dr. Otis Bowen and former Senator Birch Bayh, respectively. That evening, following the General Membership Reception, there will be a costume-optional Halloween party with prizes for the various costume categories. The Indianapolis physician band, "City Steam," will provide the music for a relaxed, fun-filled evening of dancing.

The President's Dinner-Dance, on Saturday night, will once again feature Bo Thorpe and his Big Band sounds. Mark the dates of this year's convention on your calendar. It promises to be a weekend you won't want to miss.—**Ellaine Cox, ISMA Liaison for Special Projects**

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Oestrike, Norman, M.D.
Rehn, Charles, M.D.
Scott, John, M.D.

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Hale, Bradford, M.D.

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Cooper, Daniel, M.D.
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Hall, David, M.D.
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Turner, Michael, M.D.

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Deasy, Kathy, M.D.
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Spahn, Thomas, M.D.

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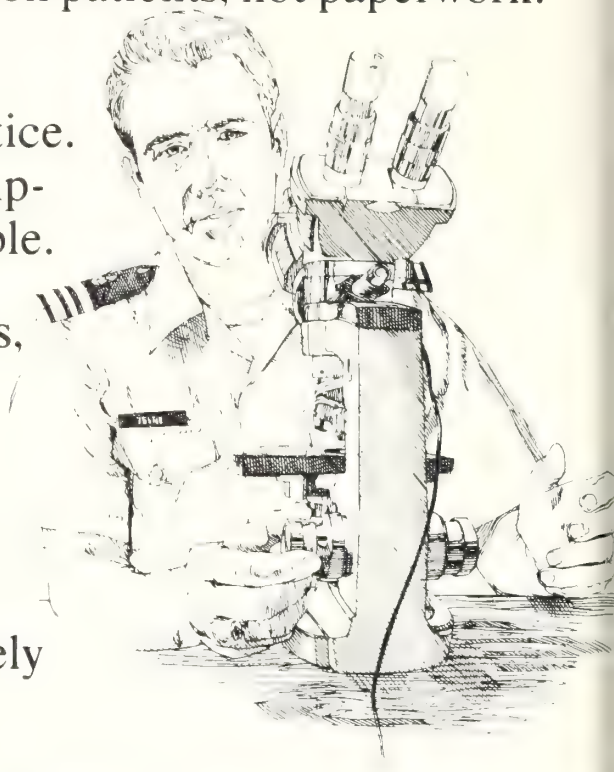
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NEWS NOTES

Abbott Introduces Assays to Detect Abused Drugs

Abbott Laboratories has introduced its first three assays for abused-drug testing, giving clinical laboratories the ability to perform drug tests with unprecedented accuracy and flexibility on the company's TDx system.

Abbott says the TDx, introduced in 1981, is the industry standard in therapeutic drug monitoring. Through the analyzer's software and use of fluorescence polarization immunoassay (FPIA) technology, laboratories can now test for the presence of abused drugs in situations ranging from routine screening to emergency cases.

The three Abbott abused-drug assays are for cocaine, barbiturates and phencyclidine (PCP). Other abused-drug tests will be introduced soon.

In both in-house and outside clinical evaluations, the three Abbott assays showed excellent correlation with the "gold standard" method of gas chromatography/mass spectrometry. In addition, the three assays showed 100% correlation with thin layer chromatography, one of the most common methods for identifying the presence of drugs in urine, during a field study conducted by Christopher S. Frings, Ph.D. of Medical Laboratory Associates in Birmingham, Ala. (Tel: 205-939-6200).

"The calibration was stable for all three tests during the entire four-week study, and the sensitivity and specificity of each assay was excellent," Dr. Frings told reporters at a media briefing held during the annual meeting of the American Association for Clinical Chemistry. "Based on our experience," he said, "the TDx provides significant advantages over current immunoassays for screening or confirming the presence of drugs in urine."

The excellent sensitivity of the assays, combined with microprocessor flexibility, makes TDx the logical choice for various drug testing needs, according to Abbott Laboratories. TDx is the only system that can be used in diverse situations, since the operator has complete flexibility within the wide threshold window to detect samples with low or high levels of drugs.

For example, in emergency room applications the measurement of drug levels needed could be different from those required in a drug counseling situation, where proof of the patient's participation in the program is important. In industrial and drug rehabilitation applications, the threshold levels can be lowered to detect any substance abuse.

To meet different customer needs, operators can use a simple keypad entry to change the level of drug detected. With other systems presently available, changing the reported cut-off requires an expensive and time-consuming series of steps.

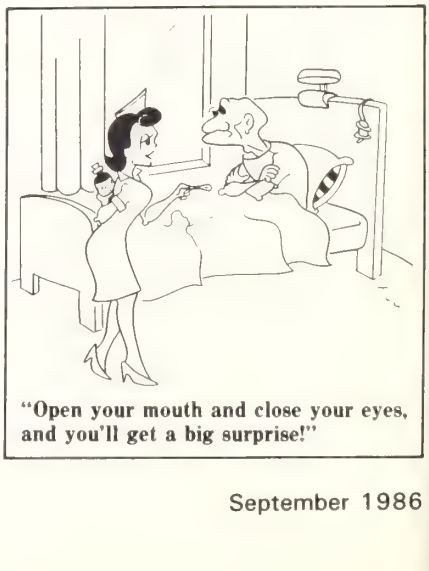
The Abbott abused-drug assays utilize the same 1-2-3 walk-away operation that has made the TDx a productive, labor-efficient system. The operator need only load a carousel with samples, put a reagent pack into the instrument, push a button, and walk away. To determine the test to be run, the system reads a bar code on the reagent pack. The TDx then accesses the software to provide automated precision pipetting, sample handling and automatic washing, which prevents sample contamination. To enhance chain-of-custody documentation, operators can proram the TDx to print operator and patient identification numbers directly on the test report.

The addition of the abused-drug assays means laboratories can now run 49 tests on the TDx, including those for therapeutic drugs, general chemistries such as glucose and cholesterol, endocrine function, serum proteins and toxicology. For further information, contact Abbott Laboratories Diagnostics Division, 1921 Hurd Drive, Irving, Texas 75061—(214) 257-6000.

CME Quiz . . .

CONTINUED FROM PAGE 805

8. Which of the following statements about breast ultrasound is *not* true?
   a. Its greatest utility is in differentiating cystic from solid masses.
   b. It uses no x-rays and has no known risks.
   c. It characterizes solid masses in fatty breasts with a high degree of accuracy.
   d. It should be used to evaluate a cyst *before* aspiration is attempted.
9. Which of the following is *not* a goal of imaging studies in patients with a palpable breast mass?
   a. Confirmation of the mass.
   b. Location of the mass.
   c. Differentiation of cystic from solid masses.
   d. Location of additional, nonpalpable masses.
10. In patients with breast masses which appear to be solid on imaging studies, which of the following statements is true?
   a. Biopsies of all solid masses should be obtained.
   b. Lesions less than 2 cm in greatest diameter should be observed serially unless there is strong suspicion for malignancy.
   c. All lesions which appear benign should be studied serially rather than biopsied, for imaging studies are highly accurate in predicting histology.
   d. The decision to biopsy or observe solid masses depends on the number of risk factors for breast cancer in the individual patient.



"Open your mouth and close your eyes, and you'll get a big surprise!"

Physician Convicted of Income Tax Evasion

A physician was properly convicted on two counts of income tax evasion, a federal appellate court for Indiana has ruled.

The physician and his wife, who was also a physician, were natives of China and immigrated to the United States in 1948. They both did psychiatric work in state hospitals and both engaged in the general practice of medicine in their own clinic. In September 1978, DEA agents discovered $21,873 in cash in a safe in a cottage used by the two physicians. They were later indicted on five counts of improper distribution of controlled substances and improper record-keeping, but a trial court dismissed the indictment as being "vague and ambiguous."

The IRS then began an investigation of the physicians for suspected tax evasion. After a thorough investigation, the physicians were indicted and tried on two counts of evading federal income taxes. A jury returned guilty verdicts against each of the physicians on both counts. It found that they had evaded $11,141 in federal income tax for tax year 1977 and $29,933 for tax year 1978. The court sentenced each of the physicians to two years of imprisonment, suspended their sentences, placed each of them on probation, and fined them $20,000 individually. They then appealed. However, the wife died after the appeal was filed and the trial court then set aside and deemed abated her convictions.

Affirming the convictions of the husband, the federal appellate court said the government did establish a reasonably certain opening net worth and cash on hand of the physician in using the net worth method to establish tax evasion. The physician claimed that the cash seized by the DEA represented money received from a loan and the sale of a house in mainland China and that he and his wife had not decided how to invest it at the time it was seized.

A DEA inspector testified that over 698,000 tablets of a controlled drug were unaccounted for in the physician's records. There was also testimony that the tablets were generally dispensed at seven cents per unit. That evidence was sufficient to sustain a finding that unrecorded sales of the drug had constituted a likely source of unreported taxable income.

The physician claimed that he had received various loans from family members in China, but was unable to furnish supporting documentation of those loans. The court rejected the physician's argument that he did not understand that the IRS was conducting a criminal investigation and that therefore he did not intelligently, knowingly, and voluntarily consent to make statements to the IRS. The court said that there was ample evidence to support the conclusion that the physician thoroughly, knowingly, and intelligently understood the warnings read to him by the IRS investigator.—*U.S. v. Chu*, 779 F.2d 356 (C.A.7, Ind., Dec. 9, 1985)—(Courtesy of *The Citation*, June 1, 1986)

Eye Care Project Gets Financial Boost

The National Eye Care Project, a program offering medical eye care and information to older Americans who can't afford it, has received a $49,575 grant from the Robert Wood Johnson Foundation.

The grant will be used to support the toll-free Eye Care Helpline for U.S. citizens and legal residents age 65 or over who don't have an eye physician, or haven't seen one in three years or more.

Through the program, ophthalmologists have examined more than 40,000 older Americans, and treated nearly 30,000 for cataracts, macular degeneration, glaucoma and other diseases.

Diabetes Funds Available

The Juvenile Diabetes Foundation International announces competitive awards for research into the cause, cure, treatment and prevention of diabetes and its complications. Research Grants, Career Development Awards and Postdoctoral Fellowships are included.

Inquiries and applications are being handled by: Grant Administrator, Juvenile Diabetes Foundation, 432 Park Avenue South, New York, N.Y. 10016—(212) 889-7575.

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NEWS NOTES

Here and There . . .

Dr. Larry R. Brazley, a Gary rheumatologist, was guest speaker at the July meeting in Merrillville of the Lupus Support Group of Northwest Indiana.

Dr. Michael C. Venturini of Indianapolis has received the Physician of the Year Award from the Medical Education Department of Community Hospitals Indianapolis.

Dr. Mohsen Ehsan, a New Albany rheumatologist, recently began giving weekly instructions in warm water exercises for members of Arthritis Is Caring Together.

Dr. G. Paul DeRosa of Indianapolis, director of the cerebral palsy clinic at Riley Children's Hospital, has been named chairman of the Dept. of Orthpaedic Surgery, I.U. School of Medicine.

Dr. Michael D. Howard of LaPorte was guest speaker at the July meeting of the local Diabetic Support Group.

Dr. Thomas J. Antalik of Muncie discussed breast surgery during a recent local program sponsored by the National Medical Homecare Center.

Dr. John L. Haste of Argos, president of the Marshall County Chapter, American Diabetes Association, has been chosen by his fellow board members as Chapter Volunteer of the Year.

Dr. John L. Zettelmaier of Chesterton served as a delegate from Porter County at the Republican State Convention in June.

Drs. Anthony H. Horan and Bruce Farringer of South Bend spoke at the Second Annual International Conference of the International Society for Technology Assessment in Health Care, conducted May 30-31 in Washington, D.C.; their topic was "Can Bone Scans Detect Ureteral Obstruction Due to Carcinoma of the Prostate?"

Dr. Floyd T. Romberger, a member of the I.U. School of Medicine clinical faculty since 1947, retired from his academic and teaching responsibilities June 30; he retired from private practice in 1975 but had continued teaching students for the past 11 years.

Dr. Marvin E. Vollmer of Indianapolis has passed the board examination for Sleep/Wake Disorders and Clinical Polysomnography; he is a fully accredited clinical polysomnographer and a fellow of the Clinical Sleep Society.

Dr. Richard T. Miyamoto of Indianapolis was the invited guest speaker of the federal Food and Drug Administration to address the Ear, Nose and Throat Panel on the subject of Cochlear Implants in Children; the meeting was held June 16 in Washington, D.C.



Dr. Hornback

Dr. Ned B. Hornback, chairman and professor of the Dept. of Radiation Oncology, I.U. School of Medicine, was the invited guest faculty lecturer for the International Hyperthermia Symposium held in Hong Kong, June 19-23; he discussed the "Results of Clinical Trials Utilizing Hyperthermia in Advanced Cancer Patients."

Dr. Howard R. Marvel, a Lafayette allergist 30 years, retired from practice July 1.

Correction

In the June 1986 issue, it was reported that Dr. Marvin R. Bernard of Merrillville had been elected president of the Indiana Neurological Society; the item should have read Indiana *Neurosurgical* Society.

Dr. Dean Maglinte of Indianapolis was a visiting professor of radiology at Northeastern Ohio Universities College of Medicine in May; he also lectured and demonstrated state-of-the-art barium techniques at the St. Thomas Medical Center in Akron, Ohio.

Dr. Thomas F. Liffick of Evansville has closed his private practice in psychiatry to become medical director of the Southwestern Indiana Mental Health Center in Evansville.

Dr. G. Gregory Clark has joined his father, Dr. George A. Clark, in the family ophthalmology practice in Indianapolis; the younger Clark represents the third generation of Clarks to practice ophthalmology in Indianapolis.

Dr. William D. Ragan of Indianapolis recently presented six talks on ultrasound at the Bowman Gray School of Medicine, Winston-Salem, N.C., during a postgraduate ultrasound course.

Dr. Terry W. Talley, an Evansville ophthalmologist, has been named chairman of the Deaconess Hospital Foundation board of directors.

Dr. Thomas J. Moretto of Indianapolis has been named medical director of Health Plus, an Indianapolis-based HMO.

Dr. Paul R. Honan of Lebanon is the new president of the Indiana Society to Prevent Blindness; he is a former president of the Indiana Academy of Ophthalmology.

Dr. Bryan E. Flueckiger, an Elkhart psychiatrist, was guest speaker at a recent meeting of the Adams County Heart Club.

Dr. Richard E. Lindseth of Indianapolis has been named president of the Pediatric Orthopaedic Society of North America and chairman of the Professional Advisory Council of the Spina Bifida Association of America.

Dr. Ronald E. Aigotti of South Bend discussed "The Diagnosis, Treatment and Rehabilitation of Cancer" during a recent local "I Can Cope" meeting.

Dr. Jonathan T. Stafford, a Bloomington radiologist, discussed mammography and breast cancer at a recent meeting of the Morgan County Memorial Hospital Guild.

Dr. David S. Batt, an Indianapolis rheumatologist, was guest speaker at the June meeting in Seymour of the Arthritis Self-Help Group.

Dr. Thomas J. Eberts, a South Bend pathologist, was guest speaker at the June meeting of the South Bend Alzheimer Support Group.

Dr. Soja Park-Bennett of Fort Wayne is the new medical director of St. Joseph's Hospital's New Focus Center for Eating Disorders.

Dr. David W. Haines of Warsaw is the new president of the medical staff at Kosciusko Community Hospital; **Dr. Michael Williams** is vice-president, and **Dr. Thomas F. Keough** is secretary.

Dr. Joseph W. Conner of Columbus has been named a diplomate of the American Board of Ophthalmology.

Dr. John S. Huoni, a Jeffersonville family physician 43 years, retired from practice in July; he and his wife plan to live in Panama City Beach, Fla.

Dr. George T. Lukemeyer of Indianapolis has been elected to a three-year term on the AMA Council on Medical Education; he is executive associate dean of the I.U. School of Medicine.

Dr. Gilbert M. Wilhelmus of Evansville has been appointed to the Indiana Medical Licensing Board by Governor Orr.



Dr. Schauwecker

Dr. Donald S. Schauwecker of Indianapolis has been appointed director of Wishard Memorial Hospital's nuclear medicine department.

Dr. Frederick A. Tolle of Indianapolis has been elected to fellowship in the American College of Physicians; he is a specialist in pulmonary diseases.

Dr. Douglas A. Triplett of Muncie has been elected to fellowship in the American College of Physicians; he specializes in pathology and hematology.

FDA Bans Use of Sulfites on Fresh Fruits, Vegetables

The U.S. Food and Drug Administration has banned the use of sulfites on fresh fruits and vegetables. The agency has received more than 500 reports of severe reactions in people allergic to the chemicals.

Sulfites include six chemical compounds that have been used to keep fresh fruits and vegetables fresh looking. Those who are sensitive to sulfites can develop hives, nausea, diarrhea and shortness of breath. Fatalities sometimes occur.

The Indiana State Board of Health reports that there have been no confirmed deaths or illnesses in Indiana, but all county health departments have been notified concerning the ban.

Nutrition Congress

The American Society for Parenteral and Enteral Nutrition's 11th Clinical Congress meets Feb. 1-4 at the New Orleans Convention Center.

For information, contact Kelly G. Tilton, A.S.P.E.N., 8605 Cameron St., Suite 500, Silver Spring, Md. 20910—(301) 587-6315.

Hospital Acted Properly in Reducing Staff Privileges

A hospital afforded a psychiatrist due process of law in not renewing his active staff membership status, an Indiana appellate court has ruled.

The psychiatrist had been admitted to the active staff of the hospital in March 1980. At the time he resided about ten miles from the hospital. In July 1981, while retaining his office in the city where the hospital was located, he moved his residence to another community about 26 miles from the hospital. His move prompted the executive committee of the medical staff to question whether he was in violation of a bylaw that required staff physicians to be located closely enough to the hospital to provide continuous care to their patients. After an investigation and exchange of letters, the executive committee recommended to the governing body that the psychiatrist's status be changed from active staff, with the right to admit patients, to that of consulting staff, which did not include such a right.

The psychiatrist requested an appeal hearing, which was held. He argued that psychiatric patients need not be visited every day, and that there was rarely a psychiatric emergency. Ultimately, his active staff privileges were demoted solely on the basis of his unavailability to the hospital to provide continuous care to his patients. A trial court entered judgment against the psychiatrist in his action against the hospital, and he appealed.

Affirming the decision, the appellate court said that the psychiatrist had been afforded due process of law. He appeared before a comittee with his counsel and cross-examined and presented witnesses. The court affirmed the trial court's decision.—*Kennedy v. St. Joseph Memorial Hospital of Kokomo Indiana, Inc.*, 482 N.E.2d 268 (Ind. Ct. of App., Aug. 21, 1985)—(Courtesy of *The Citation*, June 1, 1986)

Let Us Know!

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NEWS NOTES

New ISMA Members

David M. Barbara Jr., M.D., Lafayette, general surgery

Teofilo S. Bautista, M.D., North Judson, family practice

Eric J. Bennett, M.D., Terre Haute, emergency medicine

Richard C. Boling II, M.D., Elkhart, ophthalmology

Gabriella Castillo, M.D., Terre Haute, dermatology

Richard I. Funkey II, M.D., Columbus, neurology

Bhupendra H. Gandhi, M.D., Whiting, family practice

Lawrence R. Huntoon, M.D., Goshen, neurology

Jatinder K. Kansal, M.D., Valparaiso, internal medicine

Michael C. Kilpatrick, M.D., Princeton, family practice

Anita I. Kishan, M.D., Fort Wayne, pediatrics

Iraida M. Lainez, M.D., Fort Wayne, internal medicine

Barry W. Liechty, M.D., Fort Wayne, orthopedic surgery

Sara McCracken, M.D., Indianapolis, radiology

David S. McLaughlin, M.D., Indianapolis, obstetrics and gynecology

James R. Miller, M.D., Merrillville, neurology

Kevin J. O'Neill, M.D., Indianapolis, anesthesiology

Georges Ramalanjaona, M.D., Union City, family practice

Thomas Theocharides, M.D., Elkhart, obstetrics and gynecology

Michael G. Welsh, M.D., Indianapolis, ophthalmology

King G. Yee, M.D., Indianapolis, cardiovascular diseases

Anthony V. Zancanaro, M.D., Indianapolis, diagnostic radiology

Residents:

Richard J. Ashack, M.D., Indianapolis, internal medicine

Faye D. Barclay-Shell, M.D., Indianapolis, pediatrics

Donald L. Behrmann, M.D., Indianapolis, neurological surgery

Steven R. Brant, M.D., Indianapolis, internal medicine

David A. Burk, M.D., Indianapolis, family practice

Michael J. Butt, M.D., Terre Haute, family practice

Mark O. Carter, M.D., Gary, family practice

Mark J. Conklin, M.D., Indianapolis, orthopedic surgery

Anton J. Crepinsek Jr., M.D., Matteson, Ill., family practice

Bryan G. Cunningham, M.D., Indianapolis, pathology

Steven G. Davis, M.D., Indianapolis, internal medicine

Karen M. DeVilbiss, M.D., Indianapolis, family practice

Jama G. Edwards, M.D., Muncie, family practice

Steven E. Fisher, M.D., Indianapolis, orthopedic surgery

John J. Fitzgerald, M.D., Indianapolis, anesthesiology

Michael J. Fletcher, M.D., Oaklandon, internal medicine

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Christine R. Gest, M.D., Indianapolis, internal medicine

Stanley S. Givens, M.D., Indianapolis, therapeutic radiology

Gregory T. Hardin, M.D., Indianapolis, orthopedic surgery

Timothy N. Harwood, M.D., Indianapolis, anesthesiology

Victoria R. Heinen, M.D., Indianapolis, family practice

Keith R. Knuth, M.D., Indianapolis, family practice

David M. Kramer, M.D., Indianapolis, ophthalmology

James L. Loker, M.D., Indianapolis, pediatrics

Keith E. McEwen Jr., M.D., Indianapolis, general surgery

Cynthia A. Meyer, M.D., Indianapolis, anesthesiology

Joseph C. Moore, M.D., Indianapolis, pathology

Charles R. Myers, M.D., Muncie, anesthesiology

Jeffrey P. Naus, M.D., Indianapolis, pediatrics

Margaret L. Nolting, M.D., Indianapolis, neurology

Dan K. Nordmann, M.D., Indianapolis, internal medicine

John C. Powell, M.D., Indianapolis, general surgery

Phillip A. Ross, M.D., Indianapolis, dermatology

Ronald E. Sautter, M.D., South Bend, family practice

Deonarine Sewnauth, M.D., Indianapolis, psychiatry

Kathy J. Stewart, M.D., South Bend, family practice

Karen Tribble, M.D., Indianapolis, dermatology

Jeannette Wilcox, M.D., Indianapolis, family practice

Richard R. Yates, M.D., Indianapolis, internal medicine

Judith M. Yount, M.D., Indianapolis, general surgery

Douglas A. Zale, M.D., Indianapolis, pathology

Unusual Forms of TB Associated with AIDS

Severe and unusual forms of tuberculosis represent a newly recognized manifestation of AIDS, and, in certain circumstances, may be predictive of the syndrome, according to a study published in the July 18 issue of *JAMA*.

The researchers said the diagnosis of tuberculosis may occur concurrently with that of AIDS, or the two diagnoses may be separated by several months or as much as five years. Their study found that unusual manifestations of tuberculosis included involvement of the pericardium, multiple abscesses, abscesses in the brain, central nervous system mass lesions, or recurrent tuberculous rectal abscesses.



"Lend me your teeth! I want to whistle!"

High School Students Targeted for Program on Sexuality, Contraception

Lifetime Learning Systems and the Ortho Pharmaceutical Corporation are inaugurating "Straight Talk," the first nationwide education program on sexuality and contraception in the history of our secondary school system.

The Alan Guttmacher Institute found that, although European teenagers are as sexually active as their American counterparts, the teen pregnancy rate in the U.S. is seven times as high as the European rate. The level of sex education and especially birth control education is much greater abroad.

"Straight Talk" uses a multidimensional approach. It includes a three-part videotape, an in-class visit from a local physician, a seven-part set of classroom activities and a detailed teacher's guide.

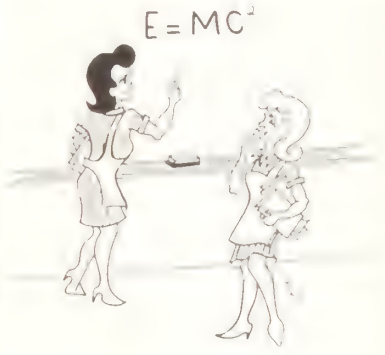
Learning Systems 800 hotline is available to answer questions from students, teachers or physicians. Callers may inquire about available resources in their areas. The number is 1-800-722-7786.

Kendrick Hospital Now Has Center for Hip and Knee Surgery

The new wing of the Kendrick Memorial Hospital in Mooresville was dedicated July 20 by U.S. Under Secretary of Health and Human Services Don M. Newman. The wing was constructed to accommodate a Center for Hip and Knee Surgery.

Dr. Merrill Ritter, Indianapolis, and his associates will utilize the many modern advancements built into the new wing to specialize in joint replacements and sports medicine.

The operating suite is built with laminar air flow walls which virtually eliminate airborne bacteria. The recovery room has the latest in computerized monitoring equipment, and is staffed with Advanced Cardiac Life Support-trained nurses to provide new levels of personalized care. The entire staff is dedicated to personalized doctor-patient relationships.



"Maybe it means that one Enema equals two doses of Magnesium Citrate."

MEDICAL TV NETWORK GOES LIVE; WORTH CATEGORY 1 CREDIT

A completely new concept for the Medical Television Network (MTN) that includes several AMA Category 1 credit programs each month is announced by Dr. George T. Lukemeyer, executive associate dean, Indiana University School of Medicine. MTN broadcasts are received by member hospitals throughout the state and at selected sites at the Indiana University Medical Center.

The new MTN will feature live videocourses, videoconferences and presentations on issues, advances in medical knowledge and techniques, financial and legal information, and other subjects important to Indiana physicians and hospital staffs.

Most programs will run from one to 1½ hours across the noon hour, except for satellite broadcasts, which vary.

The new programming began Wednesday, Sept. 3, with "Product Tampering," by Dr. Woodrow A. Myers, Indiana Public Health Commissioner (12 noon to 1:30 p.m.).

Subjects to be covered in subsequent broadcasts will include telecourses on "Physicians and Finance," "New Directions in Mental Health," and "Patient Interviewing Skills." Each of these telecourses will consist of four programs, with each part designated for 2.5 Category 1 credits, or a total of 10 credits for completing all four parts.

Single presentation teleconferences will address subjects such as "Antineoplastic Drugs," "Medical Business Focus," "SportsCare," "Fitness and Aging," some pathology update programs, "Federal Regulations Affecting Hospitals," and the "Grand Rounds in Surgery" and "The Newborn" that already have been established by MTN.

Programming planned for nursing staffs and allied health personnel recognizes the complete hospital team. For instance, a presentation on occupational therapy is scheduled in September and an Allied Health Videoconference is scheduled in October.

Various formats will be used according to the subject material, including individual and panel presentations. Some videotapes or taped segments will be shown to demonstrate or illustrate information presented. Provisions will be made on some programs for call-in questions, which then will be asked by the small, in-studio audience.

The broadcast schedule will include up to four days of programming a week.

"Calendar poster" schedules will be mailed to hospitals and individual viewers in lieu of the traditional MTN Schedule. In addition, special notices will be sent out on Category 1 programs with self-mailers for those physicians wishing to register for credits.

MTN is a service of the School of Medicine's Medical Educational Resources Program (MERP) and its Division of Continuing Medical Education. For further information on CME accreditation, call (317) 274-8353; for information on MTN or to be added to the mailing list, call (317) 274-7212.

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Indianapolis 16208

A foundation for charitable, educational, and scientific purposes, organized by the ISMA as an endowment fund to support the educational mission of the Association and INDIANA MEDICINE.

Bequests, legacies, devises, transfers or gifts to the Foundation or for its use are deductible for federal estate and gift tax purposes, in accordance with the Internal Revenue Code.

The Foundation is managed by a board of directors that comprises the members of the ISMA Executive Committee. At present, proceeds from the Foundation investments are awarded to INDIANA MEDICINE to further the continuing medical education program.

Memorial contributions made to the Foundation in lieu of flowers will be acknowledged by the secretary in a letter to the family of the deceased.

"for religious, charitable, scientific, literary or educational purposes"

OBITUARIES

Harold D. Caylor, M.D.

Dr. Caylor, 91, chairman emeritus of the Caylor-Nickel Medical Center in Bluffton, died June 16 at the Center.

He was a 1922 graduate of Rush Medical College. He retired in 1979.

Dr. Caylor, a general surgeon, was the elder son of Dr. Charles E. Caylor, founder of the Caylor-Nickel Medical Center. He was a fellow of the American College of Surgeons and had been active on the board of directors of the Indiana State Tuberculosis Association for 43 years. He was a past president of the American Association of Medical Clinics and was a member of the American Thoracic Society.



Dr. Harold D. Caylor

FILE PHOTO

John C. Slaughter, M.D.

Dr. Slaughter, 70, a retired Evansville dermatologist, died June 4 at the Regina Continuing Care Center, Evansville.

He was a 1940 graduate of the University of Nebraska College of Medicine and was an Army veteran of World War II. He retired last year.

Dr. Slaughter was a member of the American Academy of Dermatology and the American College of Physicians. He was appointed to the Indiana University Medical Center faculty in 1966. He founded Holiday for Humanity, an organization of physicians and dentists dedicated to providing medical assistance in underdeveloped countries.

William B. Ferguson, M.D.

Dr. Ferguson, 68, a Lafayette orthopedic surgeon, died July 15 at his home in West Lafayette.

He was a 1942 graduate of Indiana University School of Medicine and an Army veteran of World War II.

Dr. Ferguson had practiced in Lafayette since 1949 and, for many years, served as an orthopedic consultant for the Purdue University athletic department. He was a former chief of the medical staff at Home Hospital. He was board-certified and was a member of the American Academy of Orthopaedic Surgeons and the American College of Surgeons.

George W. Dyer, M.D.

Dr. Dyer, 73, a retired Terre Haute physician, died June 26 at Union Hospital.

He was a 1937 graduate of Rush Medical College and was an Army Air Corps veteran of World War II.

Dr. Dyer, who retired in 1978, was a former chief of the medical staff at Union Hospital.

Charles L. Herrick, M.D.

Dr. Herrick, 79, a retired Akron, Ind., general practitioner, died May 27 at his home.

He was a 1933 graduate of Indiana University School of Medicine and was an Army veteran of World War II.

Dr. Herrick, who retired in 1984, was a former chief of staff at Woodlawn Hospital in Rochester. He was a former president of the Fulton County Medical Society and was a member of the ISMA Fifty Year Club.

Martha C. Souter, M.D.

Dr. Souter, 86, a retired Indianapolis pediatrician, died July 19 at St. Vincent Hospital.

She was a 1924 graduate of Cornell University Medical School. She retired in 1983.

Dr. Souter, a diplomate of the American Board of Pediatrics, had taught at Indiana University School of Medicine and had helped train nurses at three Indianapolis hospitals. She was a member of the ISMA Fifty Year Club.

Lloyd O. Rupe, M.D.

Dr. Rupe, 73, a retired Elkhart surgeon, died July 6 at his home.

He was a 1943 graduate of Northwestern University Medical School and a Navy veteran of World War II.

Dr. Rupe, who retired last year, was a fellow of the American College of Surgeons. He was the founder and first president of the Experimental Aircraft Association; he also was a woodworker, restoring violins and wooden musical instruments.

Memorials: Indiana Medical Foundation

The Indiana Medical Foundation, Inc. was formed by the Indiana State Medical Association "for religious, charitable, scientific, literary or educational purposes." It provides financial assistance to support the educational mission of INDIANA MEDICINE.

Contributions made to the Foundation are deductible by donors in accordance with the Internal Revenue Code. Gifts are deductible for Federal estate and gift tax purposes.

The Foundation is pleased to acknowledge the receipt of gifts in remembrance of the following individuals:

Edwin W. Dyar, M.D.
Maurice E. Glock, M.D.
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Mildred Ramsey

Donald J. Destache, M.D.

Dr. Destache, 53, a former Evansville anesthesiologist, was killed July 20 in a crash of his small airplane near a Tampa, Fla., airport. His wife and stepson were also killed in the crash.

Dr. Destache, a 1959 graduate of the Medical College of Wisconsin, had practiced at Welborn Memorial Hospital from 1978 until February of this year.

He was board certified and was a member of the American Society of Anesthesiologists.

William J. Warn, M.D.

Dr. Warn, 76, a retired Milan gynecologist, died June 22 at University Hospital in Cincinnati.

He was a 1941 graduate of the University of Louisville School of Medicine and an Army Air Corps veteran of World War II.

Dr. Warn was a former secretary of the Ripley County Medical Society and a former ISMA delegate. He was a member of the Ripley County Board of Health from 1968 to 1978. Until his death, he was chairman of the Ripley County Cancer Society.

Leo Kammen, M.D.

Dr. Kammen, 73, an Indianapolis general practitioner, died July 11 at Methodist Hospital.

He was a 1935 graduate of Indiana University School of Medicine and an Army Air Corps veteran of World War II.

Dr. Kammen, a member of the American Academy of Family Physicians, had been a clinical instructor in family practice at the I.U. School of Medicine since 1976. He was president of World Wide Photo Enterprise and won many prizes for his photographs. He was a member of the ISMA Fifty Year Club.

John E. Alexander, M.D.

Dr. Alexander, 79, a retired Evansville ophthalmologist, died July 3 at his home.

He was a 1930 graduate of Indiana University School of Medicine and was an Army Air Corps veteran of World War II.

Dr. Alexander was a former ISMA delegate of the Vanderburgh County Medical Society and was a member of the ISMA Fifty Year Club. He was a fellow of the International College of Surgeons.

Lucian A. Stamper, M.D.

Dr. Stamper, 80, a former Richmond dermatologist, died June 12 in Hernando, Fla.

He was a 1930 graduate of Indiana University School of Medicine and was a veteran of World War II.

Dr. Stamper practiced in Richmond from 1937 to 1962.

Joseph E. Kopcha, M.D.

Dr. Kopcha, 80, a Hobart physician and member of the Indiana Football Hall of Fame, died July 29.

He was a 1936 graduate of Rush Medical College in Chicago and was an Army-Air Corps veteran of World War II.

Dr. Kopcha was an all-pro guard with the Chicago Bears from 1929 to 1934. He was a diplomate of the American Board of Obstetricians and Gynecologists and had practiced in Lake County since 1941. He was a former president of the Lake County Medical Society and was a former ISMA delegate.

COMMERCIAL ANNOUNCEMENTS

FACULTY POSITIONS—Indiana University School of Medicine. Two faculty positions are currently available. One applicant must have completed a General and Peripheral Vascular Surgery residency. The individual will be involved in General and Vascular Surgery and responsible for teaching medical students and residents; for clinical and experimental research; and for management of patients in the General Surgery and Vascular Surgery Service. One applicant must possess a Ph.D. in Biomedical Engineering or closely related field. The individual must have vascular diagnostic experience and a research background. The position will have responsibility for teaching medical students and residents; for clinical and experimental research; and for management of the Vascular Diagnostic Laboratory. Both positions are expected to develop a self-supporting research program. Contact in writing: Jay L. Grosfeld, M.D., Chairman, Department of Surgery, Indiana University School of Medicine, 545 Barnhill Drive, EM 244, Indianapolis, IN 46223. Indiana University is an Affirmative Action, Equal Opportunity Employer.

1987 CME CRUISE/CONFERENCES on selected medical topics—Caribbean, Mexico, Hawaii, Alaska, China/Orient, Scandinavia/Russia. 7-14 days year round. Approved for 20-24 CME Cat. 1 credits (AMA/PRA) and AAFP prescribed credits. Distinguished professors. FLY ROUND-TRIP FREE ON CARIBBEAN, MEXICAN & ALASKAN CRUISES. Excellent group fares on finest ships. Registration limited. Pre-scheduled in compliance with present IRS requirements. Information: International Conferences, 189 Lodge Ave., Huntington Station, NY 11746—(516) 549-0869.

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ASSOCIATE DIRECTOR, Family Practice Education—An Indiana 1,100-bed private teaching hospital is seeking candidates for Associate Director of Family Practice Education. This position requires a board certified family practitioner with at least five years experience in family practice residency education. This position will be responsible for the clinical operation of the Family Practice Center as well as playing a major role in the administration of the undergraduate, graduate, and continuing medical education of a large, active Family Practice Program. Competitive salary and fringe benefits are offered with opportunity of limited private practice. Interested candidates should reply in confidence with CV and references to Methodist Hospital, Attn: Academic Affairs, P.O. Box 1367, Indianapolis, IN 46206.

EXCELLENT OPPORTUNITY—Staffing Immediate Medical Care Centers owned by a major Indianapolis hospital. Immediate full and part time available. Board certified or eligible in Family Practice or E.R. preferred, others considered. Occupational Medicine experience also a big plus. Very competitive compensation and benefit package. Send current Vitae to MEDCHECK ADMINISTRATION, 1500 N. Ritter Ave., Indianapolis, IN 46219—(317) 353-9850.

Commercial announcements are published as a service to members of the Indiana State Medical Association. Only ads considered to be of advantage to members will be accepted. Advertisements of a truly commercial nature (e.g., firms selling brand products, services, etc.) will be considered for display advertising.

All orders must be in writing and will automatically be set in regular classified type. *Box numbers are not available.*

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POSITIONS AVAILABLE for qualified physicians to work St. Vincent Express Care Center, hours 11 a.m. to 11 p.m. Please contact Dr. Susan Stephens, (317) 844-9640.

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MEDICAL PRACTICE SALES—Listed below are a few available practices: **Allergy**—large Philadelphia practice; **FP + Int Med**—two Philadelphia practices; **Internal Medicine** Arizona, Bethesda, Maryland, large practice in western Pennsylvania; **Orthopedic Surgery** western Pennsylvania; **Pediatrics**—Colorado, eastern Pennsylvania and southern New Jersey; **Surgery**—New Jersey. We specialize in the valuation and selling of medical practices. If interested in buying or selling a medical practice, contact our brokerage division at: Health Care Personnel Consulting, 403 GSB Building, Bala Cynwyd, Pa. 19004—(215) 667-8630.

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OCTOBER 1986 VOL. 79 NO. 10

INDIANA MEDICINE

The Journal of the Indiana State Medical Association

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Vol. 79, No. 10
OCTOBER 1986

Devoted to the interests of the medical profession and public health in Indiana since 1908.

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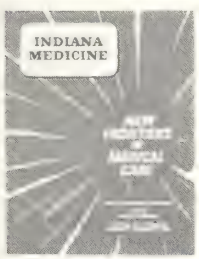
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ABOUT THE COVER

"New Frontiers in Medical Care" is the theme of this year's ISMA convention, to be conducted Oct. 30 through Nov. 2 in Indianapolis. For more information, see the pre-convention section in this issue, beginning on page 885.—COVER DESIGN BY LINDA KAMER

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MEDICAL MUSEUM NOTES



CHARLES A. BONSETT, M.D., Indianapolis

Cyrus N. Blount: 19th Century Medical Pioneer Who Became Indiana's First Physician to Write About Diabetes . . .

PUT YOURSELF BACK a century in time. You are a family physician. Your office is in its present location, but your building, furnishings and equipment are Victorian. You are performing a laboratory procedure with a urine sample provided by a patient in the next room. You are almost certain of the diagnosis from your clinical evaluation, but you want the satisfaction of laboratory confirmation.

The test amounts to pouring some of the urine into a test tube to which fresh yeast has been added. Additional urine is poured into a saucer. The tube is then inverted in the saucer and allowed to stand for a period of time at 80°F.

What disease do you suspect and how will this test be of help?

This novel method for the detection of sugar in the urine was recommended by Dr. Cyrus N. Blount of Hagers town as a most reliable technic. The gas generated by fermentation of any sugar in the urine collects in the top of the tube, its pressure forcing the urine in the tube down into the saucer.

Dr. Blount was the first Hoosier physician to write on the subject of diabetes (as judged by Kemper's Index of contributors to the *Transactions of the Indiana State Medical Society*); his article, "Diabetes Mellitus," appeared in the 1874 volume.

Although clinical descriptions of this disease had been known since the era of classical antiquity, neither the nature of the disease nor its pathological site of origin was known in 1874. Thomas Willis had noted two centuries earlier (1674) that the urine of diabetics was "sweet, as if imbued with honey or sugar," and Dr. Matthew Dobson noted in the following century (1776) that when diabetic urine was evaporated, crystals of sugar would remain. Very little was known of diabetes when Dr. Blount wrote his article. He covered the clinical features in one succinct paragraph:

"As attending symptoms we have great thirst, constipation of the bowels, a dry harsh skin, extreme hunger, flatulence, indigestion, steadily progressing debility, chills, disturbed breathing, a tendency to boils, carbuncles, (and) gangrene, till finally death closes the scene. The urine is pale and always heavier than that of health, having a specific gravity ranging from 1.030 to 1.060. . . ."

Dr. Blount continued by describing over a dozen laboratory procedures for identifying sugar in the urine, and followed with the empiric treatment methods advocated at the time. He prefaced this aspect of his article with an expression of his own good judgment:

"Bleeding (a method previously lauded) is now to be relegated to the past. The most essential part of any treatment is a proper regard to diet, for without it no treatment will accomplish anything. All articles of food containing saccharine matter should be avoided."

Dr. Blount is a good example of an Indiana physician of the late 19th century. He was born Aug. 26, 1832, in Highland County, Ohio. His family moved to Tipton County, Indiana, when Cyrus was 9, and he obtained his early education in the one-room township school of the period. He was able to attend seminaries in Hamilton and Marion Counties and later graduated from Northwestern Christian (now Butler) University in 1858. He then studied medicine with Dr. Charles Parry of Indianapolis and ultimately obtained an M.D. degree from Jefferson Medical College in 1865. He was 42 years old when he wrote his article on diabetes. He died Dec. 28, 1887.

Only two other articles on diabetes appeared in the *Transactions* before the turn of the century. One of these, by Dr. Wilson Hobbs of Knightstown (1886), indicates how he obtained laboratory evidence of diabetes: ". . . I remember now that I evaporated a pint of her urine and procured from it a lump of 'taffy' as large as a quail's egg, and consistent enought to 'pull' with my fingers."

In response to Dr. Hobbs' paper, which described a variety of diabetic therapies, Dr. Gonsolvo C. Smythe of Greencastle (who would be elected president of the Indiana State Medical Society in 1890) gave the most astute observations:

"Mr. President . . . (my experience) teaches me that no medicine that has ever been tried, unless attended with proper regulations of diet, has a single particle of influence upon the diabetic process. I have tried seven cases with bromide of arsenic. . . . In my judgment, all remedies are not only worthless, but positively dangerous. The proper treatment is to regulate the diet and eliminate all saccharine and starchy foods, or anything that can be turned into sugar. . . . It is a very difficult thing to do unless you have absolute control of the patient. . . ."

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Methodist Hospital, Indiana's most experienced referral hospital for critically injured children and adults, is proud to announce that its new facilities for trauma are now fully operational.

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WHAT'S NEW?

The American Institute of Small Business announces a two-volume set of books entitled *How To Set Up And Operate Your Own Medical Practice.* Written both for doctors now in practice and for medical students and doctors planning to go into practice. The author is Max Fallek whose book on small businesses is a textbook in more than 50 universities and colleges.

Zila Pharmaceuticals announces a new topical medication, ZILACTIN®, a highly effective, non-prescription symptomatic treatment for Herpes Simplex Virus I (HSV I) in fever blister, cold sores infections and canker sores.

Medivix, Inc. has Fiber EXCEL, a natural dietary fiber supplement available in convenient, single-serving packets and in economical one-pound cans. Fiber EXCEL is low-sodium and sugar-free, has no gummy texture or taste and is said to be an excellent way to add dietary fiber to the diet.

T Cell Sciences, Inc. announces a product distribution agreement with Boehringer Mannheim Corporation of Indianapolis (BMB) to be the sole U.S. distributor of T Cell Sciences' monoclonal antibody-based research products. These products include the CELLFREE™ Interleukin-2 Receptor Test Kit which measures soluble, released interleukin-2 receptors in serum and other body fluids; and the ACT-T-SET™ Monoclonal Antibodies used to measure the various stages of the immune response.

The Voice Products Division of Harris Corporation announces a new concept of executive productivity called the "Extended Office." To supplement portable laptop computers and cellular car phones, they announce the Lanier Pocket Escort™ and the Lanier Pocket Caddy™ which allow the busy physician to dictate during travel time while commuting or flying. Truly pocket-sized and lightweight, these models feature one-button-control which allows a physician to record, rewind, review and pause for thought with a single button.

Abbott Laboratories has adapted FPIA (fluorescence polarization immunoassay) to form a new generation of abused drug assays, known as *TDx* Abused Drug Assays. FPIA is based on the competition between a drug in the patient's sample and a fluorescein-labeled (or "tagged") antigen for a limited number of binding sites on an antigen molecule. The fluorescein-labeled tracer absorbs polarized light and emits polarized light proportional to the apparent size of the molecule. A very large molecule indicates a small amount of the drug. The *TDx* microprocessor utilizes a curvefit algorithm and a series of calibrators to calculate the concentration of the drug being assayed.

Hewlett-Packard announces that the Rappaport-Sprague stethoscope, the HP 280-A01, now is available in a presentation case suitable for awards or gifts. The stethoscope is acoustically superior. The fiberglass diaphragm is more stable and allows fewer sound aberrations from temperature changes. Soft eartips are more comfortable. A chrome-plated hose clip reduces noise artifacts. The presentation case is a mahogany-stained, wooden box with an engraved brass plaque.

Quintron, Inc. announces that its Sonic Surgery™ Division offers a "power assist" bone removal instrument. Its "on demand" sonic energy reduces the brute force required to penetrate and remove dense bone without injury to underlying soft tissue. The sonic energy is straight line and has no torque. The instrument cutting tips do not "walk" as high speed burrs may.

News of what is new in the medical supply industry is composed of abstracts from news releases by book publishers and manufacturers of pharmaceuticals, clinical laboratory supplies, instruments and surgical appliances. Each item is published as news and does not necessarily constitute an endorsement of a product or recommendation for its use by INDIANA MEDICINE or by the Indiana State Medical Association.

The Indiana Brace Company announces EHOB (elevate-head-of-bed), a system of nine air cushions which can be arranged in various combinations to accomplish comfortable and effective body positions for a vareity of conditions. The three different sizes of the cushions makes it possible to elevate any part of the body. The EHOB is Medicare and Medicaid approved.

George Calamaras is handling the details of a new disposable instrument tray, made of plastic with 3-dimensional molded-in racks to hold instruments, sutures and ties neatly. It is the invention of a former Army sergeant, Isamari Villarreal, a surgical technician at William Beaumont General Hospital. It is light in weight, rigid, and eliminates operating room noise caused by instruments and metal trays.

Hewlett-Packard is introducing a fetal ultrasound telemetry to provide accurate, non-invasive monitoring of patients, while permitting complete ambulatory freedom. A wide-beam ultrasound Doppler Transducer, together with the proven autocorrelation algorithm on the HP 8040A or HP 8041A fetal monitors, allows accurate fetal heart rate (FHR) monitoring, even before the patient's membranes are ruptured.

The American Thermometer Company announces FeverScan products, which are designed to provide health care professionals with a reliable means to constantly monitor patients' temperatures in a variety of settings from emergency situations to surgery to routine hospital room care. The device adheres to the forehead for constant monitoring. It is easy to read and can be given to patients for home use. The extended range disposable model, with adhesive back, is used to continually monitor when hypo-hyperthermic conditions exist. Another model, the dermatemp, may be used on any area of the body for measuring temperature to aid in diagnosing disturbances of local blood flows.



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PEOPLES DRUG

FUTURE FILE

Indiana University CME

Oct. 18-19: Legal Role of the Expert: A Focus on Child Abuse, Adam's Mark Hotel, Indianapolis.

Oct. 24: Physicians Approach to Exercise Injuries, Brown County Inn, Nashville, Ind.

Nov. 6-7: Garceau-Wray Lectures, I.U. Medical Center, Indianapolis.

Nov. 7-8: American College of Physicians, Indiana Chapter Scientific Session, Sheraton Marten House, Indianapolis.

Nov. 21: Care of the Sick Newborn, Hilton-at-the-Circle, Indianapolis.

For further information, contact Melody Dian, CME, I.U. School of Medicine—(317) 274-8353.

Cincinnati Seminar

"How To Take Advantage Of Your Many Options" is the title of an important seminar for physicians that will deal with the subject, "Physician Controlled Alternative Health Care Delivery Systems." The meeting is on November 10 and 11 at the Westin Hotel at Fountain Square in Cincinnati.

For a copy of the program, registration blank and details about hotel accommodations, contact the Academy of Medicine of Cincinnati, 320 Broadway, Cincinnati 45202—(513) 421-7010.



"That's the guy I casually asked if he thought it would rain—and he charged me for his answer."

Johns Hopkins CME

The Johns Hopkins University School of Medicine offers the 28th Annual Postgraduate Institute for Pathologists in Clinical Cytopathology. This is designed as a Subspecialty Residency in Clinical Cytopathology, then highly compressed for the busy pathologist into 152 AMA Category 1 credit hours in two courses, both of which must be taken:

—February through April 1987, Home Study Course A is provided registrants for personal reading and microscopic study at their own laboratory in preparation for Course B; and

—April 27 to May 8, 1987, In-Residence Course B is an extremely concentrated lecture series, intensive laboratory studies, and vital clinical experience at the Johns Hopkins Medical Institutions in Baltimore.

Application and completed pre-registration is advised at the earliest date possible, to assure an opening. Completed pre-registration, however, must be accomplished before March 27, 1987, unless by special arrangement.

For details write John K. Frost, M.D., 604 Pathology Building, The Johns Hopkins Hospital, Baltimore, Md. 21205.

Diabetes Mellitus

"Perspectives in Diabetes Mellitus 1986" is the subject of a CME course to be conducted Nov. 14-15 at the University of Wisconsin Clinical Science Center in Madison.

AMA Category 1 credit is 12 hours. AAFP prescribed credit has been applied for.

Contact Sarah Aslakson, 465-B WARF Bldg., 610 Walnut St., Madison, Wisc. 53705—(608) 263-2856.

The *Journal of the American Medical Association* publishes a list of CME courses for the United States twice yearly. The January listing features courses offered from March through August; the July listing features courses offered from September through February.

Doppler Echocardiography

"Doppler Echocardiography Workshop: Basic and Advanced Seminars" will be conducted Oct. 20-24 at the Northwestern University Medical School Alumni Center for CME, 301 E. Chicago Ave., Chicago 60611.

ACCME Category 1 credit is 33 hours. The basic seminar is $175, the advanced seminar is $375; cost for both is $450. Contact Paula Puntenney at (312) 908-8533.

Laser Symposium

A symposium and workshop, "Lasers for the Plastic Surgeon," will be conducted Nov. 14-16 in Orlando, Fla. at the Orlando Regional Medical Center's Laser Laboratory.

For more information, contact the Plastic Surgery Educational Foundation, 233 N. Michigan Ave., Suite 1900, Chicago 60601.

ACP Regional Meeting

The Indiana Regional Scientific Meeting of the American College of Physicians will be conducted Nov. 7-8 at the Sheraton Marten House, Indianapolis.

For more information, contact Dr. Richard C. Powell, ACP Governor for Indiana, I.U. Medical Center, Emerson Hall, Room 302, 545 Barnhill Drive, Indianapolis 46223—(317) 274-8133.

Univ. of Kentucky CME

Oct. 24-25: Workshop on Total Hip and Total Knee Replacement, Radisson Plaza Hotel, Lexington, Ky.

Oct. 26-31: Seventeenth Family Medicine Review, Hyatt Regency Hotel, Lexington.

Dec. 19-20: Advances in Gastrointestinal Surgery, Hyatt Regency Hotel, Lexington.

Feb. 22-27: Eighteenth Family Medicine Review, Hyatt Regency Hotel, Lexington.

For additional information, contact Joy Greene, CME, College of Medicine, University of Kentucky—(606) 233-5161.

Family Practice Review

"Family Practice Review—a Comprehensive Update" will be the subject of a CME meeting at Omaha, Neb., April 27 to May 8. Another CME meeting on the same subject will be conducted from March 30 to April 10.

The registration fee for each meeting is $850. Contact Marge Adey, University of Nebraska Medical Center for CME, 42nd and Dewey Avenues, Omaha 68105—(402) 559-4152.

Pacific Institute CME

"Hawaii 87: Critical Issues in Primary Care" is the title of a CME course to be conducted March 9-13 at the Waiohai Hotel, Poipu Beach, Kauai, Hawaii. It is being co-sponsored by the Pacific Institute of Continuing Medical Education and the Hawaii Medical Association.

The course is accredited for 20 AMA Category 1 hours and 20 AAFP-prescribed hours.

For more information, write Valerie Murray, Pacific Institute of CME, P.O. Box 1059, Koloa, Kauai, Hawaii 96756.

Pediatric Depression

"Child and Adolescent Depression and Suicide" is the subject of a CME program to be presented by the University of Wisconsin Oct. 31 and Nov. 1 at the Sheraton Inn and Conference Center, Madison. AMA Category 1 and AAFP elective credits are for 12 hours.

Contact Ann Bailey, 454 WARF Bldg., 610 Walnut St., Madison, Wisc. 53705—(608) 263-2854.

Family Practice

The 11th Annual "Midwinter Family Practice" conference will be conducted by the University of Michigan Medical School Feb. 1-6 at the Hilton Shanty Creek, Bellaire, Mich. Category 1 and AAFP credits: 21.5 hours.

The correspondent is Gayle Fox, Office of CME, Towsley Center, Box 0201, Ann Arbor, Mich. 48109—(313) 763-1400.

Aging and Illness

"Aging and Illness in Primary Care: The 5th Symposium on Clinical Problems and the Future of Health Care of the Elderly" will be the theme of a CME meeting at the Radisson Inn, Madison, Wisc., Nov. 13-14.

The meeting is accredited for 15 AMA Category 1 hours and approximately 15 AAFP-prescribed credits.

The correspondent is Sarah Aslakson, 465-B WARF Bldg., 610 Walnut St., Madison, Wisc. 53705—(608) 263-2856.

Sleep Disorders

The Sleep Disorders Center at Winona Memorial hospital, Indianapolis, will sponsor its Second Annual Sleep Disorders Conference Jan. 16 at the hospital.

Peter Haury, Ph.D., Dartmouth, will be the featured speaker. An expert in psycho-physiology, he will also be speaking at the Indiana Psychiatric Society meeting Jan. 15.

For details, please call Karon Crowe, Medical Education, Winona Hospital—(317) 927-2042.

Methodist Hospital CME

Oct. 15: Symposium on Intraoperative Radiation Therapy, Methodist Hospital Auditorium, Indianapolis.

Nov. 7-8: Advanced Trauma Life Support, Methodist Hospital, Wile Hall Room 317, Indianapolis.

Nov. 12: Lester Bibler, M.D., Annual F.P. Lectureship on "Practical Topics for the Care of the Elderly," Methodist Hospital Auditorium, Indianapolis.

Nov. 12-13: 5th Annual Pediatric Critical Care Symposium, Radisson Plaza Hotel, Indianapolis.

Nov. 19: Prolongation of Life: Ethical Dilemmas of Modern Medical Technology, Part II, 1982-1986. Co-sponsored by St. Vincent Hospital. Hyatt Regency, Indianapolis.

For more information, contact Dixie Estridge, CME coordinator, Graduate Medical Center, Methodist Hospital of Indiana—(317) 929-3733.

Primary Care Update

"Primary Care Update" will be the theme of the 71st Scientific Assembly of the Interstate Postgraduate Medical Association, which meets Nov. 10-13 at the Town and Country Hotel, San Diego, Calif.

Six areas—cardiology, gastroenterology, endocrinology, pediatrics, orthopedics and neurology—will be covered especially for primary physicians in half-day sessions and a special evening panel on AIDS.

For full information, contact H. B. Maronay, Executive Director, IPMANA, P.O. Box 1109, Madison, Wisc. 53701—(608) 257-6781.

Medical Care Economics

"The New Economics of Medical Care: The Identifier Concept" is the subject of meetings to be held Nov. 19 and March 18 at the Warwick Hotel, New York City.

The tuition is $110. The meeting will address topics such as DRGs and Prospective Payment Systems, Managing Case-Mix, The Identifier Concept, Managing Health Care Costs, etc. It is designed for hospital administrators, chief executives and financial officers, hospital department heads, physicians and allied health professionals.

Contact Ann J. Boehme, Long Island Jewish Medical Center, New Hyde Park, N.Y. 11042—(718) 470-8650.



"I've been thinking big like you said, Doctor. How about a $50,000 raise?"

CANCER CORNER

WILLIAM M. DUGAN, JR., M.D.
Methodist Hospital Cancer Care Center, Indianapolis

The Inheritance of Hemophilia. A second edition publication presents the basic facts about the genetics of hemophilia. The publication includes information on new genetic testing and reflects increased knowledge of Factor VII and Factor IX brought about by cloning of genes. To obtain a copy of this publication contact your local National Hemophilia Foundation chapter or write: The National Hemophilia Foundation's Office, The SOHO Bldg., 110 Greene St., Room 406, New York, N.Y. 10012—212/219-8180.

Association of Community Cancer Centers. All kinds of institutions and organizations belong to ACCC. Hospital Cancer Programs, Freestanding Cancer Centers, HMOs, Group Practices . . . all providers of organized multidisciplinary cancer care . . . can apply for Delegate status. These institutions and organizations have a common interest in the cancer patient and development of programs to meet the full spectrum of needs for cancer patients and their families.

Some are small community hospitals; others are university-based comprehensive cancer centers with an interest in community activities; some are freestanding radiation therapy centers; others are large groups of oncologists. In all of these cases, ACCC members are concerned about the realities of cancer care; the how and why of cancer program development; the costs of cancer care; the impact of Prospective Payment capitation and competition; and establishing and maintaining high standards for quality patient care.

Individual (General) members receive quarterly issues of *The Journal of Cancer Program Management*; they are listed annually in Community Cancer Centers and Programs in the U.S.; and, from time to time, receive "Special Communiques" on critical legislative issues. General members also receive discount rates for ACCC national meetings. For more information regarding membership write to: Association of Community Cancer centers, 11600 Nebel St., Suite 201, Rockville, Md. 20852.

Hospice: The First Three Years. This month, *CARING Magazine* will release a special issue devoted to hospice care in America. This release will coincide with the end of the first three-year demonstration project of the Hospice Medicare benefit.

Articles in the issue will cover hospice from the point of view of: administration; legal issues; reimbursements; case studies; institutional hospices; management; psychosocial issues; clinical protocols; in-home hospice programs; portraits of care givers.

For subscription information write: *CARING Magazine*, 519 C. Street NE., Washington, D.C. 20002—202/547-5277.

COPE . . . A national news magazine is the first national publication written for cancer patients and their families. The magazine does not give medical advice or clinical information on the treatment of cancer. It focuses on everyday news developments and events that will help provide a better understanding of the illness for the patient and the family. Subscribers to the publication ($45 for one year or $26 for six months) may designate $5 of their order to be contributed to research programs of the American Cancer Society, the Leukemia Society of America, the Cancer Research Institute, or Cancer Care. Publication offices are at 12600 West Colfax Ave., Suite B-400, Denver, Colo. 80125, or call 1-800-343-COPE.

20th Annual Meeting of the American Association for Cancer Education will be held November 11 through the 14th and is sponsored by the American Association for Cancer Education, at Montreal. Inquiries should be made to: George J. Hill, M.D., President, Dept. of Surgery, New Jersey Medical School, 100 Bergen St., Newark, N.J. 07103 or call 201/456-6295.

Cancer Word Book, a dictionary for cancer patients and their families, defines some of the medical and scientific terms commonly used by physicians, nurses, researchers and technicians who deal with cancer on a daily basis. The booklet is available free of charge through your local American Cancer Society.

Common Misunderstandings About the Use of Morphine for Chronic Pain in Advanced Cancer. T. Declan Walsh, MSc., who is with the Memorial Sloan-Kettering Cancer Center in New York City, states 11 common beliefs about morphine and explains why they are false. The first notion discussed is that morphine is a poor oral analgesic, although Mr. Walsh says that oral morphine can be effective, citing data in support of his claim. He also challenges the concern that morphine addiction is common in cancer patients and discusses morphine administration, dose range and drug tolerance. The booklet is published by the American Cancer Society and is available free at local ACS units.

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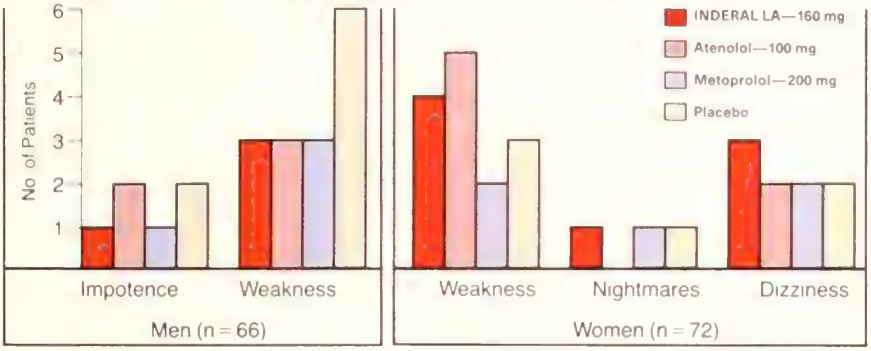
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CONTRAINDICATIONS

Propranolol hydrochloride (INDERAL® LA): Propranolol is contraindicated in 1) cardiogenic shock, 2) sinus bradycardia and greater than first degree block, 3) bronchial asthma, 4) congestive heart failure (see WARNINGS) unless the failure is secondary to a tachyarrhythmia treatable with propranolol.

Hydrochlorothiazide: Hydrochlorothiazide is contraindicated in patients with anuria or hypersensitivity to this or other sulfonamide-derived drugs.

WARNINGS

Propranolol hydrochloride (INDERAL® LA): CARDIAC FAILURE. Sympathetic stimulation may be a vital component supporting circulatory function in patients with congestive heart failure, and its inhibition by beta blockade may precipitate more severe failure. Although beta blockers should be avoided in overt congestive heart failure, if necessary, they can be used with close follow-up in patients with a history of failure who are well compensated, and are receiving digitalis and diuretics. Beta-adrenergic blocking agents do not abolish the inotropic action of digitalis on heart muscle.

IN PATIENTS WITHOUT A HISTORY OF HEART FAILURE, continued use of beta blockers can, in some cases, lead to cardiac failure. Therefore, at the first sign or symptom of heart failure, the patient should be digitalized and/or treated with diuretics, and the response observed closely, or propranolol should be discontinued (gradually, if possible).

IN PATIENTS WITH ANGINA PECTORIS, there have been reports of exacerbation of angina and, in some cases, myocardial infarction following *abrupt* discontinuance of propranolol therapy. Therefore, when discontinuance of propranolol is planned the dosage should be gradually reduced and the patient carefully monitored. In addition, when propranolol is prescribed for angina pectoris, the patient should be cautioned against interruption or cessation of therapy without the physician's advice. If propranolol therapy is interrupted and exacerbation of angina occurs, it usually is advisable to reinstitute propranolol therapy and take other measures appropriate for the management of unstable angina pectoris. Since coronary artery disease may be unrecognized, it may be prudent to follow the above advice in patients considered at risk of having occult atherosclerotic heart disease who are given propranolol for other indications.

THYROTOXICOSIS. Beta blockade may mask certain clinical signs of hyperthyroidism. Therefore, abrupt withdrawal of propranolol may be followed by an exacerbation of symptoms of hyperthyroidism, including thyroid storm. Propranolol does not distort thyroid function tests.

IN PATIENTS WITH WOLFF-PARKINSON-WHITE SYNDROME, several cases have been reported in which, after propranolol, the tachycardia was replaced by a severe bradycardia requiring a demand pacemaker. In one case this resulted after an initial dose of 5 mg propranolol.

MAJOR SURGERY. The necessity or desirability of withdrawal of beta-blocking therapy prior to major surgery is controversial. It should be noted, however, that the impaired ability of the heart to respond to reflex adrenergic stimuli may augment the risks of general anesthesia and surgical procedures.

Nonallergic Bronchospasm (eg, chronic bronchitis, emphysema)—PATIENTS WITH BRONCHOSPASTIC DISEASES SHOULD, IN GENERAL, NOT RECEIVE BETA BLOCKERS. INDERAL should be administered with caution, since it may block bronchodilation produced by endogenous and exogenous catecholamine stimulation of beta receptors.

DIABETES AND HYPOGLYCEMIA. Beta-adrenergic blockade may prevent the appearance of certain premonitory signs and symptoms (pulse rate and pressure changes) of acute hypoglycemia in labile insulin-dependent diabetes. In these patients, it may be more difficult to adjust the dosage of insulin. Hypoglycemic attacks may be accompanied by a precipitous elevation of blood pressure.

Hydrochlorothiazide: Thiazides should be used with caution in severe renal disease. In patients with renal disease, thiazides may precipitate azotemia. In patients with impaired renal function, cumulative effects of the drug may develop.

Thiazides should also be used with caution in patients with impaired hepatic function or progressive liver disease, since minor alterations of fluid and electrolyte balance may precipitate hepatic coma.

Thiazides may add to or potentiate the action of other antihypertensive drugs. Potentiation occurs with ganglionic or peripheral adrenergic-blocking drugs.

Sensitivity reactions may occur in patients with a history of allergy or bronchial asthma.

The possibility of exacerbation or activation of systemic lupus erythematosus has been reported.

PRECAUTIONS

Propranolol hydrochloride (INDERAL® LA): GENERAL. Propranolol should be used with caution in patients with impaired hepatic or renal function. Propranolol is not indicated for the treatment of hypertensive emergencies.

Beta-adrenoreceptor blockade can cause reduction of intraocular pressure. Patients should be told that propranolol may interfere with the glaucoma screening test. Withdrawal may lead to a return of increased intraocular pressure.

CLINICAL LABORATORY TESTS. Elevated blood urea levels in patients with severe heart disease, elevated serum transaminase, alkaline phosphatase, lactate dehydrogenase.

DRUG INTERACTIONS. Patients receiving catecholamine-depleting drugs, such as reserpine, should be closely observed if propranolol is administered. The added catecholamine-blocking action may produce an excessive reduction of resting sympathetic nervous activity, which may result in hypotension, marked bradycardia, vertigo, syncopal attacks, or orthostatic hypotension.

CARCINOGENESIS, MUTAGENESIS, IMPAIRMENT OF FERTILITY. Long-term studies in animals have been conducted to evaluate toxic effects and carcinogenic potential. In 18-month studies, in both rats and mice, employing doses up to 150 mg/kg/day, there was no evidence of significant drug-induced toxicity. There were no drug-related tumorigenic effects at any of the dosage levels. Reproductive studies in animals did not show any impairment of fertility that was attributable to the drug.

PREGNANCY. Pregnancy Category C. Propranolol has been shown to be embryotoxic in animal studies at doses about 10 times greater than the maximal recommended human dose. There are no adequate and well-controlled studies in pregnant women. Propranolol should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

NURSING MOTHERS. Propranolol is excreted in human milk. Caution should be exercised when propranolol is administered to a nursing mother.

PEDIATRIC USE. Safety and effectiveness in children have not been established.

Hydrochlorothiazide: GENERAL. Periodic determination of serum electrolytes to detect possible electrolyte imbalance should be performed at appropriate intervals.

All patients receiving thiazide therapy should be observed for clinical signs of fluid or electrolyte imbalance, namely: Hyponatremia, hypochloremic alkalosis, and hypokalemia. Serum and urine electrolyte determinations are particularly important when the patient is vomiting excessively or receiving parenteral fluids. Medication such as digitalis may also influence serum electrolytes. Warning signs irrespective of cause are: Dryness of mouth, thirst, weakness, lethargy, drowsiness, restlessness, muscle pains or cramps, muscular fatigue, hypotension, oliguria, tachycardia, and gastrointestinal disturbances such as nausea and vomiting.

Hypokalemia may develop, especially with brisk diuresis, when severe cirrhosis is present, or during concomitant use of corticosteroids or ACTH.

Interference with adequate oral electrolyte intake will also contribute to hypokalemia. Hypokalemia can sensitize or exaggerate the response of the heart to the toxic effect of digitalis (eg, increased ventricular irritability). Hypokalemia may be avoided or treated by use of potassium supplements, such as foods with a high potassium content.

Any chloride deficit is generally mild and usually does not require specific treatment, except under extraordinary circumstances (as in liver or renal disease). Dilutional hyponatremia may occur in edematous patients in hot weather; appropriate therapy is water restriction, rather than administration of salt, except in rare instances when the hyponatremia is life-threatening. In actual salt depletion, appropriate replacement is the therapy of choice.

Hyperuricemia may occur or frank gout may be precipitated in certain patients receiving thiazide therapy.

Insulin requirements in diabetic patients may be increased, decreased, or unchanged. Diabetes mellitus which has been latent may become manifest during thiazide administration.

If progressive renal impairment becomes evident, consider withholding or discontinuing diuretic therapy.

Thiazides may decrease serum PBI levels without signs of thyroid disturbance.

Calcium excretion is decreased by thiazides. Pathologic changes in the parathyroid gland with hypercalcemia and hypophosphatemia have been observed in a few patients on prolonged thiazide therapy. The common complications of hyperparathyroidism, such as renal lithiasis, bone resorption, and peptic ulceration, have not been seen. Thiazides should be discontinued before carrying out tests for parathyroid function.

DRUG INTERACTIONS. Thiazide drugs may increase the responsiveness to tubocurarine.

The antihypertensive effects of thiazides may be enhanced in the postsympathectomy patient. Thiazides may decrease arterial responsiveness to norepinephrine. This diminution is not sufficient to preclude effectiveness of the pressor agent for therapeutic use.

PREGNANCY. Pregnancy Category C. Thiazides cross the placental barrier and appear in cord blood. The use of thiazides in pregnancy requires that the anticipated benefit be weighed against possible hazards to the fetus. These hazards include fetal or neonatal jaundice, thrombocytopenia, and possibly other adverse reactions which have occurred in the adult.

NURSING MOTHERS. Thiazides appear in human milk. If use of the drug is deemed essential, the patient should stop nursing.

PEDIATRIC USE. Safety and effectiveness in children have not been established.

ADVERSE REACTIONS

Propranolol hydrochloride (INDERAL® LA): Most adverse effects have been mild and transient and have rarely required the withdrawal of therapy.

Cardiovascular. Bradycardia; congestive heart failure; intensification of AV block; hypotension; paresthesia of hands; thrombocytopenic purpura; arterial insufficiency, usually of the Raynaud type.

Central Nervous System. Lightheadedness; mental depression manifested by insomnia, lassitude, weakness, fatigue, reversible mental depression progressing to catatonia; visual disturbances; hallucinations; an acute reversible syndrome characterized by disorientation for time and place; short-term memory loss; emotional lability; slightly clouded sensorium; and decreased performance on neuropsychometrics.

Gastrointestinal. Nausea, vomiting, epigastric distress, abdominal cramping, diarrhea, constipation, mesenteric arterial thrombosis, ischemic colitis.

Allergic. Pharyngitis and agranulocytosis, erythematous rash, fever combined with aching and sore throat, laryngospasm and respiratory distress.

Respiratory. Bronchospasm.

Hematologic. Agranulocytosis, nonthrombocytopenic purpura, thrombocytopenic purpura.

Auto-Immune. In extremely rare instances, systemic lupus erythematosus has been reported.

Miscellaneous. Alopecia, LE-like reactions, psoriasiform rashes, dry eyes, male impotence, and Peyronie's disease have been reported rarely. Oculomucocutaneous reaction involving the skin, serous membranes, and conjunctivae reported for a beta blocker (practolol) have not been associated with propranolol.

Hydrochlorothiazide:

Gastrointestinal. Anorexia, gastric irritation, nausea, vomiting, cramping, diarrhea, constipation, jaundice (intrahepatic cholestatic jaundice), pancreatitis, sialadenitis.

Central Nervous System. Dizziness, vertigo, paresthesias, headache, xanthopsia.

Hematologic. Leukopenia, agranulocytosis, thrombocytopenia, aplastic anemia.

Cardiovascular. Orthostatic hypotension (may be aggravated by alcohol, barbiturates or narcotics).

Hypersensitivity. Purpura, photosensitivity; rash, urticaria, necrotizing angiitis (vasculitis, cutaneous vasculitis), fever, respiratory distress, including pneumonitis, anaphylactic reactions.

Other. Hyperglycemia, glycosuria; hyperuricemia, muscle spasm, weakness, restlessness, transient blurred vision.

Whenever adverse reactions are moderate or severe, thiazide dosage should be reduced or therapy withdrawn.

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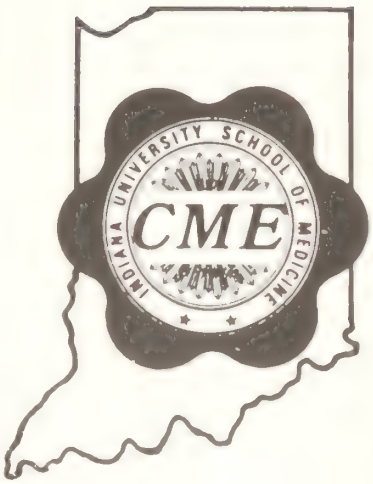
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Home Oxygen Therapy for Infants and Children

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PATSY WYLIE, R.R.T.
Indianapolis

UNTIL THE LATE 1960s, treatment with oxygen required hospitalization. In 1968, Petty and Finigan reported the use of ambulatory oxygen for adults with chronic obstructive lung disease.[1] Since then, the physiologic, psychologic and economic benefits of this mode of therapy have been well documented.[2,3,4,5]

The first description of similar benefits of home oxygen therapy for infants appeared in 1976.[6] Subsequent reports have supported these initial findings, demonstrating that hypoxemic children achieve better growth, have decreased irritability, show increased appetite and have a decreased incidence of cor pulmonale when placed on home oxygen therapy.[7,8,9] The demand for home oxygen therapy for children has increased as the benefits of this therapy have become apparent and as the trend to minimize health care costs has gained momentum.

The causes of lung disease in children and the needs of these children differ from their adult counterparts. Manufacturing companies have responded by creating equipment designed specifically for diagnosing and treating children. Likewise, physicians charged with the care of children have established criteria for diagnosis and are developing guidelines for prescribing oxygen. These issues will be addressed in the following discussion, as well as the circumstances under which oxygen can be discontinued—a problem unique to children.

Hypoxemia in Children

Chronic lung disease is the major cause of hypoxemia in pediatric patients who require home oxygen. The causes of chronic lung disease in children include bronchopulmonary dysplasia (usually the sequelae of hyaline membrane disease), cystic

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fibrosis and other forms of bronchiectasis (e.g., immotile cilia syndrome), and interstitial pneumonitis from infection, hypersensitization, radiation, chemotherapy or metabolic disease. Additional causes of hypoxemia include congenital heart disease, cardiomyopathies with associated congestive failure, and respiratory failure secondary to neurologic and neuromuscular disease (e.g., cerebral palsy, spinal muscle atrophy). Hypoxemia in infants with neurologic diseases usually occurs secondary to chronic aspiration and ventilation perfusion mismatching from hypoventilation and inadequate cough.

One hundred thirty-seven patients were discharged from the Riley Hospital for Children on home oxygen between 1978 and 1985. Thirty-three percent of these were children with bronchopulmonary dysplasia. Patients with cystic fibrosis accounted for 18% and patients with heart disease another 18%. Other diagnoses were interstitial pneumonitis, including that caused by complications of malignancy or its therapy (9%) and aspiration syndromes (8%). Other respiratory problems, including sleep hypoventilation, neuromuscular disease, upper airway obstruction and hypoplastic lungs accounted for the remainder.

Diagnostic Evaluation

In the child with underlying lung problems, complaints of morning headache, exertional dyspnea, poor school performance, irritability and anxiety suggest hypoxemia. The infant with hypoxemia may present with apnea, diaphoresis, feeding difficulties and failure to thrive. Physical signs include tachypnea, tachycardia, pallor, evidence of congestive heart failure and cyanosis. Cyanosis is a late and unreliable sign of hypoxemia since recognition varies with individual perception, patient skin complexion and lighting conditions. Cyanosis is usually present when there are five grams of reduced hemoglobin per 100 ml of blood (an arterial pO_2 of approximately 50 mm Hg or less).

Random arterial oxygen levels only partially reflect the child's oxygen needs.[10] Transcutaneous pO_2 monitors and oximeters adapted to small ears, hands and feet have enabled us to monitor blood oxygen levels continuously and noninvasively. These give an accurate assessment of the patient's oxygen needs.[10&11] We prefer the oximeter since it requires less time to calibrate and can be used for extended periods of time without causing thermal injury. Oximetry measures oxygen saturation by monitoring the transmission of two light wavelengths through the vascular bed of the ear lobe, hand or foot.

One study in children with bronchopulmonary dysplasia suggests that a paO_2 greater than 55 mm Hg (oxygen saturation of 87% under normal conditions) prevents the development of right heart failure in these children.[12] Others have advocated trying to achieve higher saturations (90% or more) to alleviate pulmonary hypertension and prevent cor polmonale.[13] Our goal is to maintain an oxygen saturation of at least 90% during all activities, especially those that increase oxygen demand such as eating, sleeping and exercise.

Documentation of oxygen need is not only beneficial for the patient, but increasingly necessary to obtain financial reimbursement for this service by third-party payers. New Medicare criteria for coverage of home oxygen require laboratory evidence of hypoxemia (defined as a paO_2 of less than 55 mm Hg or less severe arterial hypoxemia with evidence of tissue hypoxemia) and a prescription from the physician specifying diagnosis, oxygen concentration and flow rate and an estimate of frequency and duration of use. The new criteria also restrict the use of oxygen. Oxygen for patients with dyspnea without hypoxemia or a terminal illness not affecting the lungs will not receive coverage.[14] These standards have not been implemented by other insurance carriers or Medicaid at the present time, but many third-party payers adopt Medicare standards when establishing policies for reimbursement.

Home Discharge

Home oxygen therapy should be considered when an infant or child has significant hypoxemia in the chronic stable state and no longer needs the continuous care provided in the hospital setting. The infant should be gaining weight while taking his full feeding by mouth or gastrostomy tube. The family and patient (if an older child) should be in full agreement with this alternative care option. There should be at least two adults in the household capable of caring for the child and handling the equipment.

Many families and patients fear the use of oxygen. The belief that oxygen is addictive and signifies the end of an active life must be countered by counseling and emphasis of its palliative nature. On the other hand, the feeling of relief at hospital discharge after a long illness may give the family inappropriately high expectations and make them prone to frustration when setbacks occur. As many as 35% of children with oxygen-dependent bronchopulmonary dysplasia require rehospitalization.[9] It is extremely important that the nature of the illness is discussed with the family and that continued counseling and support is available.

The Pediatric Pulmonary Home Care Center Program at Riley involves a team approach which consists of the pediatric pulmonologist, the primary nurse, the pulmonary nurse specialist, a social worker, a respiratory therapist, a continuity of care specialist ("discharge coordinator") and a dietitian, all of whom work with the parents, home oxygen provider agency, third-party payers and primary physician to arrange disposition. This multidisciplinary team provides a smooth transition from the hospital to home setting and ensures coordinated outpatient care for the patients.

TABLE
Approximate Monthly Rental Costs of Home Oxygen Systems*

SYSTEM	COST				TOTAL COST
	BASE	REFILLS	PORTABLE	REFILLS	
Compressed oxygen with portable E cylinder	$ 50	$385	$40	$15	$490
Liquid oxygen with portable unit	$110	$225	included		$335
Oxygen concentrator	$300	–	$40	$15	$355
with portable E cylinder	$300	–	$40	$15	$355
Oxygen enricher with portable E cylinder	$350	–	$40	$15	$405

*Based on 2 LPM continuous flow, Indianapolis, 1986.

Methods of Home Oxygen Delivery

There are four sources of oxygen for home administration. These include:

(1) compressed gas
(2) liquid oxygen with a transfilling system
(3) an oxygen concentrator
(4) an oxygen enricher

The choice of a system depends on the needs of the patient. The suitability and correct oxygen flow should be evaluated using oximetry prior to implementation of the home system. The *Table* shows comparative cost based on the average price of each system.

Compressed oxygen is stored in tanks under pressure and is available for home use in large H and K cylinders or small portable D and E cylinders. H and K cylinders are a cost effective choice for the patient with an infrequent need for home oxygen and can serve as an emergency back-up system in the event of a mechanical failure of the primary system. The D or E cylinder is relatively convenient for the patient who needs portable oxygen infrequently. The newer aluminum E cylinders weigh from 6½ to 9½ pounds when filled and can provide five hours of continuous oxygen at 2 LPM. The disadvantages of this system include:

(1) the large, bulky size of the K cylinders (three cylinders per week would be necessary to provide 2 LPM of continuous oxygen flow)
(2) the manual dexterity and strength required to change regulators
(3) the possible projectile hazard of the tank or regulator if accidently ruptured or disconnected.

Liquid oxygen systems store oxygen liquid in a reservoir under high pressure and low temperature. Internal coils vaporize oxygen to a room temperature gas for breathing. Liquid oxygen systems provide a large volume of oxygen in a relatively small space. One reservoir can provide 215 hours of oxygen at 2 LPM of continuous flow. These systems include a safe, long-lasting portable unit which can be conveniently transfilled from the reservoir. It can provide seven hours of oxygen at 2 LPM of continuous flow. The portable units are comparable in weight to E cylinders and may be carried via a shoulder strap or placed on lightweight carts for pulling. Liquid systems are easy to operate, clean and relatively safe. Reservoirs usually require weekly refills, depending on oxygen use. Evaporative losses with the newer systems are low even in hot weather. Liquid oxygen is a cost-effective choice for the ambulatory patient who requires continuous oxygen.

The oxygen concentrator is an electrically powered device equipped with two molecular sieve units that utilize absorbant materials, such as inorganic sodium or aluminum silicate pellets, to separate oxygen from other molecules in room air. The resultant oxygen concentration is dependent upon liter flow, delivering as much as 90% oxygen at low liter flows. Concentrators offer a convenient, easy-to-use system of continuous oxygen flow for the patient with low flow requirements and an infrequent need for portable oxygen. A supplemental gas or liquid system is required to provide portable oxygen. Concentrators are frequently designed to resemble furniture and require little maintenance. Disadvantages of the system include an increase in electric bills, a high noise level associated with sieve purging and limited flow capability (flow maximum of 5 LPM).

All of the above-mentioned systems provide dry oxygen and require the addition of external humidifiers, if humidity is desired. The bubble-type humidifier generally used provides approximately 40% relative humidity at room temperature. Condensation in the tubing may decrease the amount actually delivered. Infants and children with thick secretions require more ef-



FIGURE 1: Membrane type oxygen enricher (OECO, Oxygen Enrichment Co., Schenectady, N.Y.).



FIGURE 2: Infant using a nasal cannula secured by stoma-adhesive and tape.

fective humidification than provided by the bubble humidifier. Jet nebulization can provide more moisture, but its propensity to cause bronchospasm in children with reactive airway disease limits its usefulness. The problem of humidification has been overcome in the oxygen enricher.

The oxygen enricher (*Figure 1*) has a semi-permeable membrane that allows passage of only water vapor and oxygen. The oxygen enricher provides 30% or 40% oxygen with 100% relative humidity. Condensation is minimized by using heated delivery tubing. This system is ideal for providing low flow oxygen to children with cystic fibrosis or bronchopulmonary dysplasia who have thick secretions. Because of its lower oxygen percentage, roughly 2½ to 3 times the flow is necessary to achieve oxygenation equivalent to that obtained from sources delivering 100% oxygen. Newer models have flow meters which have already incorporated this correction factor. Supplemental portable oxygen systems are required with the enricher for patients on continuous oxygen. The enricher is quieter than the concentrator because it does not use the purging mechanism. Disadvantages include an increase in electric bills and the limited flow capability (flow maximum of 2½ LPM).

Methods for delivery of oxygen for children in the home include nasal cannula, nasal catheter, mask, oxygen tent and tracheostomy collar. The nasal cannula (*Figure 2*) is available in infant, child and adult sizes. It is relatively comfortable, light weight and easy to apply. Potential hazards associated with its use include irritation of the nares and upper lip and outflow obstruction in the obligate nasal breather if the prongs are too large or dislodged. In spite of potential problems, we have found this method to be the most acceptable to patients and parents, and its use is rarely limited by the problems mentioned.

Once a popular method for delivering oxygen to infants, the nasal catheter has been almost totally replaced by other available means. It is inserted through the nares to the

level of the uvula. This is often poorly tolerated. It also requires changing the catheter from side to side at least twice daily. Alternatively, the catheter tip may be taped at the base of the nares, which is more comfortable, but results in decreased oxygen delivery. The nasal cannula and catheter both require the use of tape on the face to keep the system in place, which may be irritating. A small amount of stoma adhesive on each cheek, changed weekly, is less irritating and can act as the anchor for the cannula or catheter.

Face masks can be used, but are generally not recommended for long-term therapy. Care must be taken to ensure that flows are sufficient to prevent carbon dioxide retention in the mask. Additional problems include pressure injury, skin breakdown from trapped humidity, bulkiness, impaired communication, and interference with eating and drinking.

The oxygen tent has been used in the home on a limited basis for infants and children unwilling or unable to tolerate the above mentioned methods. High oxygen flow and vigilance are required to maintain a stable oxygen level and prevent carbon dioxide retention in the tent. The tents currently available are uncomfortable since they tend to trap heat and moisture.

Tracheostomy masks may be used to deliver the required F_IO_2 for children with tracheostomy tubes. The masks should be clear plastic to allow visualization of the tracheostomy site.

Safety concerns must be addressed before oxygen is placed in the home. Oxygen should never be stored in extremes of heat or cold, or used close to sources of heat or ignition. Tanks should be handled with care and safely secured. The patient and family should be instructed by a qualified respiratory therapist in the use and handling of all equipment. With these precautions, accidents are extremely rare and the fire hazard is low.

Oxygen Discontinuation

Few adult patients discharged on oxygen can be weaned. This is not true of children whose lungs retain the capacity for growth. One example is children with bronchopulmonary dysplasia who can usually be weaned from oxygen before their second birthday.[9] We follow these children monthly, using the ear oximeter to evaluate oxygen needs at rest, asleep, feeding and with activity. When oxygen saturation can be maintained greater than 90% on room air during these activities, oxygen is discontinued.

Ideally, electrocardiographic evidence of right ventricular hypertrophy should be resolved. It is important to realize that the pulmonary reserve of these patients remain low and any additional respiratory problems can increase oxygen requirements. The process of weaning is slow and respiratory infections may constitute significant setbacks which require a resumption or increase in oxygen. Continued medical and psychological support for the family cannot be overemphasized.

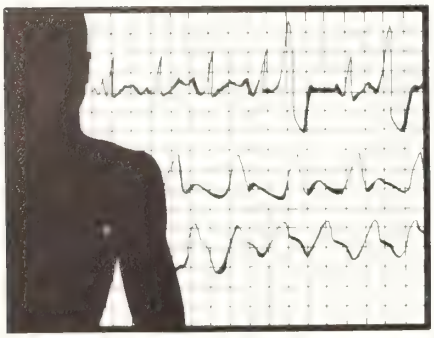
Summary

The means for identifying and treating children with home oxygen are now available. Children treated in this manner can sustain active, nearly normal lives and many can eventually be weaned. Periodic evaluation and documentation of the oxygen requirement is important for optimal treatment, to assure that the patient and family receive financial support for this undertaking and to determine when oxygen is no longer needed. The multidisciplinary team provides subspecialty and ancillary services as well as continuity of care. In addition, they afford an avenue of communication with physicians and services in the community to ensure a smooth hospital-to-home transition.

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BRAIN DEATH



ADULT CRITICAL CARE MEDICINE

Methodist Hospital OF INDIANA, INC

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Indianapolis

THE RECENT ADDITION to the Indiana Code adopted into law in March 1986, which addresses the declaration of death in Indiana, is the Uniform Determination of Death Act utilized by many other states. This new statute, shown in the *Figure*, permits the declaration of a patient's death either when cardiorespiratory or brain function ceases. Although the concept that brain death is equivalent to patient death has been widely used in Indiana without legislative authorization, this law makes more timely a review of those criteria that may constitute the "accepted medical standard" for the diagnosis of brain death in the adult patient. Those special precautions needed for the evaluation of this condition in children will not be discussed here.

The anatomic, physiologic and medical tenets of brain death are absolute; that is, once neuronal death has occurred the central nervous system is unable to replace or reproduce that lost tissue through cell division. Hence, the absolute statement that once the whole brain is dead the patient cannot recover is biologically correct. There-

SENATE ENROLLED ACT No. 282

AN ACT to amend the Indiana Code concerning death.

Be it enacted by the General Assembly of the State of Indiana:

SECTION 1. IC 1-1-4-3 IS ADDED TO THE INDIANA CODE AS A NEW SECTION TO READ AS FOLLOWS: **Sec. 3. (a) Only an individual who has sustained either:**

(1) irreversible cessation of circulatory and respiratory functions; or

(2) irreversible cessation of all functions of the entire brain, including the brain stem;

is dead. A determination of death must be made in accordance with accepted medical standards.

(b) This section shall be applied and construed to effectuate its general purpose to make uniform the law with respect to the subject of this section among states enacting it.

(c) This section may be cited as the Uniform Determination of Death Act.

SECTION 2. **Because an emergency exists, this act takes effect upon passage.**

The new Indiana Death Statute.

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fore, the critical clinical issue becomes a matter of diagnosis, i.e., documentation that all parts of the brain are dead. A matter of terminology is important to note. *Cerebral death* identifies death only of the brain's cerebrum and is synonymous with the term "neocortical death." *Brain death*, however, refers to complete loss of all function of the cerebrum, cerebellum and brain stem. Unfortunately, some publications use the two terms interchangeably, which is in error.

There is no single national set of criteria defining brain death that has been legislatively or legally determined to be absolute or required. In a few states criteria lists have been enacted, but in most statutes either the Uniform Determination of Death Act is used or similar phraseology allows a customary or usual standard of practice to govern methodologic issues. More traditionally, therefore, hospitals, medical staff organizations, or individual[1] physicians have evolved criteria or adopted those advocated by another "authoritative" group.

Many lists of such criteria have been published[2] and come from such groups as the University of Pittsburgh, Harvard Medical School, United States Navy, Medical Colleges of the United Kingdom, National Institute of Neurological Diseases and Stroke,[3] the President's Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research,[4] and others.

Different sets of criteria incorporate tests measuring physiologic brain function, anatomic blood vessel perfusion, or both. These available tests are listed in the *Table*. Some criteria require one or more of these examinations to confirm the clinical suspicion of brain death as determined by the patient's history and physical examination, while others rely solely upon clinical findings. Each test, however, must be used correctly so as to maximize its accuracy and minimize diagnostic errors.

In general, all criteria, as an extension of direct patient care, incorporate a carefully performed physical examination of all parts of the brain. This clinical examination is performed in the usual manner to evaluate cortical, midbrain, cranial nerve and medullary function. The examination of spinal cord function is not a part of this assessment. For example, peripheral reflexes such as a response to painful stimuli administered over the distribution of spinal cord nerve roots and the activity of deep tendon reflexes are not valid parts of brain death criteria.

In addition, during the clinical examination for brain death all conditions or factors must be excluded that might suppress neurologic function and lead to a "falsely positive" brain death diagnosis. This limitation and warning is true for all those tests in the *Table* depending upon the evaluation of physiologic brain function. Those factors that will potentially make the clinical examination and other physiologic tests invalid include the presence of shock, hypothermia (usually given as less than 32°C) and intoxicating substances including paralytic agents, barbiturates, methaqualone, diazepam, mecloqualone, meprobamate, trichloroethylene[5] and possibly hypophosphatemia.[6]

Variability, however, in physical findings exists among patients even when brain death is confirmed by other testing.[2] The pupils must be light-fixed but need not be equal or dilated. Body temperature is usually low but, because the patient is actually poikilothermic, warming from exogenous sources such as a heating blanket or heated gas from the ventilator may produce apparent fever. Diabetes insipidus due to absent hypothalamic function may or may not occur. Likewise, complex spinal cord reflexes that resemble decorticate posturing have also been noted[7] but do not invalidate the examination.

Two tests of brain stem function deserve special mention. An intravenous bolus injection of a milligram of atropine should not increase the heart rate as this vagally mediated response should be lost in brain death.[2] Similarly, if bradycardia should occur in the brain dead patient atropine will be ineffective so that a direct chronotrope such as isoproterenol will be needed if treatment is to be given.

TABLE
Tests Used in the Diagnosis of Brain Death

Tests of Physiologic Function

1) Physical examination
2) Atropine bolus
3) Apnea testing
4) EEG
5) Evoked control responses
6) Cerebral function monitor

Tests of Blood Vessel Perfusion

1) Carotid and vertebral angiography
2) Radioisotope cerebral blood flow
3) CAT scan with contrast
4) Ultrasonic echoencephalography
5) Doppler shift ultrasound
6) Digital subtraction angiography or venography

Apnea testing to assess the medulla's respiratory center must be included in the physical assessment. A variety of methods have been advocated,[2,8] but all require that the physiologic stimulus of hypercarbia (usually above a $PaCO_2$ of 55) be achieved while observing the patient for spontaneous breathing. Rarely, hypoxemia should also be induced as the stimulus needed for a patient dependent upon a hypoxic drive to respiration. The patient who responds by making any respiratory effort is not brain dead as long as this medullary response persists.

If, when, or how frequently the clinical examination and/or other tests must be repeated also varies between published criteria, and covers the full range of variations. For example, the Harvard Criteria require a repeat set of studies at 24 hours whereas the Medical Colleges criteria require no repetition for final diagnosis. Again, a clear standard does not exist but should be clearly stated in any policy statement or practice adopted.

A variety of additional tests to corroborate or validate the clinical findings of brain death likewise have been advocated. As noted, those tests dependent upon neuronal function may be invalidated by the previously described conditions of shock, hypothermia, or ingestion of some drugs. However, when no blood flow to the brain is demonstrated by angiography or similar test of anatomic perfusion to all the brain, a reliable diagnosis of brain death can be made even in the presence of severe drug intoxication, shock or hypothermia. Four vessel angiography is generally accepted, therefore, as the most reliable test but is not always available in some hospitals and may itself induce bradycardia or hypotension, which may harm remaining viable neurons.[2]

Digital subtraction angiography or venography is a similar technique considered by some to be less invasive and as accurate as traditional angiograms but requires rather elaborate radiographic equipment.[9] Bedside radioisotopic cerebral blood flow measurements are extremely useful in some patients and very accurately evaluate blood flow through the carotid circulation to the cerebrum.[10] Because this technique does not evalute the vertebral artery circulation[11,12] to the brain stem, it must be combined with an accurate clinical assessment of the brain stem. Hence, it should not be used to corroborate brain death when the cranial nerve reflexes and medullary functions cannot be reliably tested.

A Clear Standard for the Final Diagnosis of Brain Death Does Not Exist . . .

Frequently, the electroencephalogram (EEG) is used as a corroborative test because it is commonly available and highly correlated with absent flow on angiography. When carefully recorded in the absence of intoxicants, etc., and using maximum sensitivity settings as stipulated by the American Electroencephalographic Society, an EEG showing a "flat" or isoelectric pattern is usually highly reliable. Infrequent examples of "reversible" isoelectric EEGs have, however, been documented.[2,13] Supplementation of the EEG by attempting to measure cortical responses to various stimuli, i.e., evoked cortical responses, has been reported[14] but is not commonly available and has not been shown to add substantially to the information gained from the EEG alone.

Other tests reported of value but not widely applied to this diagnosis include contrast enhanced computerized axial tomography (CAT scanning)[15] wherein the intracranial vascular structures fail to fill with contrast and hence do not visualize; loss of pulsations of the midline echo during ultrasonic echoencephalography representing absent blood flow;[16] absent cerebral activity on the cerebral function monitor,[17] which provides frequency and amplitude processing of cortical electrical signals similar to the EEG; markedly increased intracranial pressure;[2] elevated cerebrospinal fluid enzymes; and demonstration of reverse flow in the common carotid arteries by ultrasound.[18]

A variety of criteria sets and evaluations procedures, therefore, are available for the diagnosis of brain death. Each method of testing has either limitations or potential side effects which must be weighed carefully so as to select the appropriate test or combination of tests to eliminate any possibility of an erroneous diagnosis. The possibility of organ donation is a crucial corollary to the topic of brain death and represents an opportunity for giving organs that are needed in Indiana. As each physician assesses the impact of the new state statute in his/her own practice, it may be helpful to seek the consultative support of other physicians familiar with brain death evaluation and to seek from their medical staff organization or hospital standardized guidelines for that locality which define accepted medical practice.

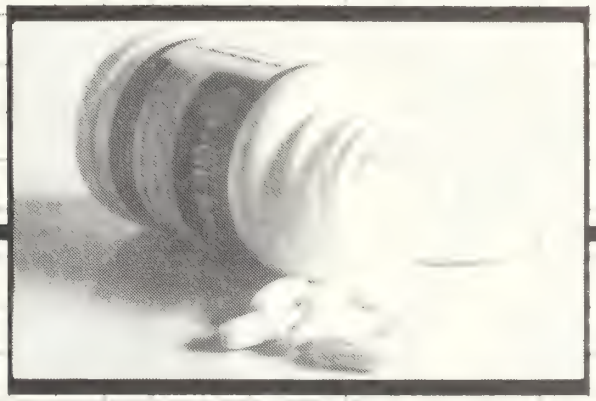
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Breast Feeding and Necrotizing Enterocolitis

Resident Medical Society Award-Winning Essay

Third Prize Winner, Resident Medical Society Essay Contest

MARK W. BRADLEY, M.D.
Indianapolis

NECROTIZING ENTEROCOLITIS (NEC) is a disease affecting preterm newborns and is the most common neonatal surgical emergency. The first case was probably described in the eighteen hundreds, but only recently is a consensus developing as to the etiology. Kosloske believes that at least two of the following events must occur simultaneously: a) intestinal ischemia, b) colonization of the gut by pathologic bacteria, and c) excess substrate in the lumen for growth.[1] Wijesinha agrees that the common denominator of NEC is damage to the intestinal mucosa, but also feels that the neonatal immune system's immaturity makes him susceptable to bacterial invasion.[2]

Causes of intestinal ischemia have been reviewed elsewhere.[2,3] Ischemia is believed to affect various enzyme systems in the bowel wall, notably decreasing the activity of the Na+/K+ ATPase and pump, as well as glucose/galactose transport. This mucosal damage is believed to open the way for invasion by pathogens.[4]

The infectious aspects of NEC are an interesting puzzle. Epidemics of NEC are documented[5] but more than one organism is often reported in the same outbreak.[6] Giving credence to the infectious nature is the often reported termination of outbreaks by strict infection control measures. Organisms most often implicated are *Clostridia spp., E. coli, Klebsiella pneumoniae, Enterobacter cloacae,* and *Salmonella.*

It has been hypothesized that breast feeding is responsible for low NEC rates in regions such as Scandinavia where the practice is widespread. In India, a study showed the incidence of all neonatal infections was significantly lower in infants fed fresh breast milk than in those fed formula.[7] Studies in this country have been stimulated by an experimental model in which rats can be protected from an NEC-like syndrome caused by induced bowel ischemia and *Klebsiella pneumoniae* inoculation.[8] In this model, fresh maternal rat milk is protective. Neither previously frozen maternal milk nor formula were protective, however. Interestingly, when leukocytes from maternal milk were added to formula, protection was afforded. The authors rightly point out that these results do not automatically apply to humans, but they are certainly suggestive.

Attempts to study this hypothesis in man from an immunologic stand-point offer suggestive information. Ogra, Weintraub, and Ogra[9] found that although neonates receive passive immunity from their mothers transplacentally, this consists only of IgG antibodies. No IgA or IgM activity has been found in umbilical cord serum. However, IgM activity was found in fecal specimens along with IgG. IgA coproantibodies were found in the stool only after feeding colostrum. Secretory IgA found in colostrum is resistant to acid and proteolytic damage. It may prevent gastrointestinal disease by preventing bacterial binding to the mucosa, or by intraluminal agglutination.[4] Furthermore, these antibodies may be sensitized to the same microbial flora that the infant is exposed to from the mother at delivery and subsequently.

Leukocytes are present in human milk, and they may likewise be sensitized to the same flora the neonate is exposed to. This "homing" hypothesis proposes that cells sensitized in the maternal GI-tract migrate to the breast for secretion into milk. The most common cell is the macrophage, which retains motility and phagocytic properties.[4] This may be especially important since the phagocytes of a preterm infant have depressed bacterial uptake and killing.[10] Kliegman has reported a 23% decrease in macrophages and a decrease in leukocyte viability of 18% after refrigerator storage of breast milk at 4°C for 48 hours.[11]

Dr. Bradley, Dept. of Graduate Medical Education, Methodist Hospital of Indiana, prepared this article for the 1985-86 medical essay contest sponsored by the Resident Medical Society of the Indiana State Medical Association and by INDIANA MEDICINE. The article was picked by the judges for third prize.

Another important aspect of breast milk is a mitogen which has been isolated that may be important in maintaining cell division in the gastrointestinal mucosa.[12] The authors did not study the effect of freezing or storage on its activity, however.

An important difference noted in breast-fed infants is an abundance of *Lactobacillus bifidus*. This bacterium inhibits the growth of *E. coli*. A specific *L. bifidus* growth-promoting factor is present in breast milk and may decrease the risk from a potentially invasive pathogen.[4]

Other factors present in breast milk are listed in the *Table*. Several of these factors may serve to bind bacterial growth factors, *eg.* folate binding protein, lactoferrin, and B_{12} binding protein.

Clinical studies to verify the protective effect of breast milk have been disappointing due to the numerous variables involved. None has shown a protective effect, but all can be criticized by proponents. A study by Moriarty, *et al.*[13] has compared significantly different infant groups. Their breast-fed group weighed an average of 870 grams less than the control formula fed group, and was three weeks earlier in gestational age! Also, they used milk which had been previously frozen. A study by Eyal, *et al.* compares fresh breast milk from both mothers and donors to infants not fed enterally at all and is not valid.[14] In another study only one infant in the breast milk group was fed exclusively breast milk.[6] A report in *Lancet* demonstrates that NEC does develop in infants fed fresh mother's milk, but in this case, too, the milk was refrigerated.[15] Of course, the point made by Goldman must be considered in view of these overall negative findings: there may be no such protective effect.[16]

The myriad of variables makes the clinical demonstration of a beneficial effect difficult. Also important to keep in mind is the increased nutritional requirement a growing preterm infant demands. Many neonatologists feel that breast milk, if used in the intensive care setting for a neonate of less than 34 weeks gestational age, must be supplemented to provide this extra need. This has not been well controlled in the studies cited.

TABLE
Protective Factors in Breast Milk*

Factor	Function
IgA, IgG, IgM	mucosal protection
	bacterial agglutination
	coproantibodies
	antitoxins
leukocytes	"homing" hypothesis
	phagocytosis
	cell-mediated immunity
breast milk mitogen	maintain mucosal cell division
Bifidus factor	promote growth of *L. bifidus*
lactose	
unsaturated fatty acids	inhibit *Staphylococcus* growth
lysozyme	lysis of bacterial cell walls
lactoperoxidase	bactericidal activity
folate binding protein	bind bacterial growth factors
lactoferrin	
B_{12} binding protein interferon	inhibit viral replication
C3, C4, C3-proactivator	alternate complement pathway

* after Kliegman.[4]

In conclusion, there is a growing consensus that NEC is a common final pathway for several pathologic processes. Most hypotheses involve the invasion of an already-damaged intestinal mucosa by bacteria, the amount of predisposing damage needed being inversely proportional to the virulence of the microbial flora present.

Breast milk contains many factors known to be immunologically active, many of which are not intrinsically present in the neonate. *In vitro* activity of these factors has been well-documented. *In vivo* activity has also been shown by measuring coproantibodies and the overall lower rate of neonatal gastrointestinal illness.

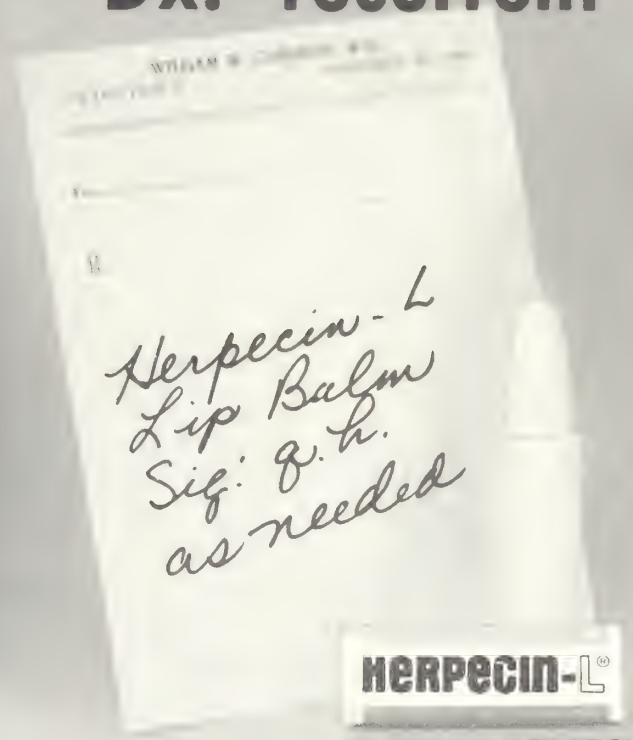
Numerous studies attempting to validate the efficacy of breast milk in lowering the rate of NEC have been unable to do so. There are methodologic grounds to question the studies done so far, as many used something other than fresh, unfrozen/unrefrigerated maternal milk. Studies have demonstrated a decrease in immunologic activity of several breast milk components after cold storage. Likewise, if the "homing" hypothesis is true, donor milk is unlikely to contain the properly sensitized antibodies and leukocytes.

At the present time, therefore, the negative studies are unconvincing. In considering the role of bacteria in NEC, the immunologically immature state of the neonate, and the active immunologic factors present in breast milk, it would seem prudent to consider the use of fresh maternal breast milk when possible in the infant at risk for NEC. Fortification should be considered in the very small pre-term neonate, for example, using a half-and-half preparation of fresh maternal breast milk and one of the special premature formulas.

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Cat Scratch Disease: A Case Report

C. SINGH THETHI, M.D.
Marion

Abstract

Cat scratch disease is one of the causes of persistent lymphadenopathy in children and adolescents. This benign, self-limiting disease has to be differentiated from other benign and malignant diseases such as tularemia, sarcoid, histoplasmosis, Hodgkin's disease, and other lymphomas.[1] Very recently, its etiological organism was found after intensive research for 50 years.[1] This has rekindled interest in cat scratch disease. The present case report is of a young adult in whom cat scratch disease was diagnosed due to typical symptoms, history and lymph node biopsy.

CAT SCRATCH DISEASE is frequently missed in differential diagnoses of neck masses in children and adolescents because of the lack of any specific serological tests, and because skin test antigen is not available commercially. This has led to months of anxiety in patients about malignant tumors of the neck; it also has led to neck biopsies, which can be avoided in the future.[2]

Cat scratch disease is an indolent, occasionally suppurative, regional lymphadenitis caused by the scratch or bite of a cat. Pustular lesions develop at that site and the patient complains of malaise, fever and headache, etc. It is mainly seen in temperate zones, mostly in the fall and winter. The condition resolves completely in a few months.[3]

Case Report

A 32-year-old white man was hospitalized in January with fever of two days duration. He had chills, malaise, anorexia and painful nodular swellings in the arm, left axilla and left side of the neck. The swellings were increasing in size and becoming more painful. There was no history of such swellings, of tuberculosis, or of weight loss.

The patient's temperature was 102.4 F; pulse 110; respiration 20; blood pressure 110/70. He had tender, discrete lymph nodes from the elbow to the axilla on the medial part of the arm ranging in size from 1 to 2 cm. in diameter. The left axillary lymph nodes were palpable and tender. There was no lymphangitis between the lymph nodes. There was no mark of injury on the left hand. Examination of the heart and lungs was normal. The abdomen showed no organomegaly. There was no rash. The white blood count was 10,000/cu. mm. with shift to the left, polymorphs 67%, lymphocytes 21%, eosinophils 7%, monocytes 5%, Hgb. 13.9 gm, hematocrit 40.2%, blood urea nitrogen 12% mg. Electrocardiogram showed sinus tachycardia. Chest x-ray was normal. The blood culture showed no growth.

The patient remained febrile for four days. On the second day a tender swelling developed at the base of the terminal phalanx of the left index finger. The patient then recalled that he had been scratched by his pet kitten three or four days before becoming ill. The swelling on the finger gradually increased and developed into a pustule. As it was very painful, it was incised and drained.

The fever subsided in four days but there was no decrease in the size of the lymph nodes. Attempts to obtain antigen for a cat scratch skin test were unsuccessful. The patient and family were very worried about a possible



Index finger shows swelling at the site of the cat scratch.



Left axillary lymphadenopathy.

From the Veterans Administration Hospital, East 38th St., Marion, Ind. 46952.

malignancy. Biopsy of a left axillary lymph node showed two irregular, grayish brown, fairly soft masses. Microscopic examination revealed acute necrosis with stellate histocytic response, the pattern being consistent with cat scratch disease. The lymph node swelling gradually decreased and in three months had completely resolved.



Histopathology of lymph node biopsy shows acute necrosis with stellate histocystic response.

Discussion

Cat scratch disease was a mystery for the last 50 years since the initial case was reported by Debre. About 2,000 cases have been reported but still it is very commonly misdiagnosed.[1] Margileth and Carithers were seeing about 200 cases per year, although predisposing conditions are very common as there are about 20 million pet cats. Due to a recent breakthrough in detecting the organism, this very common condition in children stands a very good chance of being correctly diagnosed.[4]

Wear and his colleagues at the Armed Forces Institute of Pathology discovered that a small gram-negative bacillus is responsible for this disease.[10] The accidental discovery occurred when they stained lymph nodes with Warthin-Starry stain used for spirochetes. In collaboration with Margileth, who had been working on it for 20 years, they developed a skin test antigen for cat scratch disease. In 34 of 39 cases clinically and histopathologically proved, they found this gram-negative bacteria in the walls of capillaries in and near follicular hyperplasia, and within microabscesses. This bacillus is also seen in lesions on fingers from cat scratches. They also can be detected by immunoperoxidase stain in convalescent serum. This opened the possibility of making cat scratch antigen available on a commercial scale to confirm the diagnosis of most common chronic cervical lymphadenopathy in children.

Cat scratch disease is usually a benign, self-limiting disease with tender, regional chronic lymphadenopathy in the area of drainage, identification of the site of inoculation, history of close contact with or scratch by a cat, and a positive skin test. At least three of four criteria should be satisfied.

Contact with a cat is present in 90% of the cases; a scratch, bite or lick can cause it. It can also be caused by a dog bite, thorn wood splinter or scratch from a wood splinter, but there is always a cat in the vicinity.[1] Cats act only as carriers as they are healthy and a skin test is negative in them.[3] The incubation period is two to three weeks. Person-to-person contact is not reported. Veterenarians have a higher incidence of positive skin test. Attempts to recover the causative organism from saliva or claws of a cat have been unsuccessful.[1]

Histopathological changes are nonspecific. In early stages reticulum hyperplasia is seen, followed by necrotizing granuloma, sometimes with giant cells. They develop into multiple micro-abscesses. Hence, it has to be differentiated from tularemia brucellosis, tuberculosis, sarcoidosis, lymphoma, and Hodgkin's disease.[1]

Most of the clinical features are similar to the case described. No clinical signs other than lymphadenopathy occurred in 50% of Margileth's cases. Splenogemaly was present in 16% of the last 364 cases. Exanthems of all kinds, maculopapular, petechial, or erythema nodosum or multiforme occurred in 4% of Margileth's cases. Rarely, it causes syndrome of Parinaud,[6] encephalitis, and osteolytic lesions.[7]

In the Margileth series thrombocytopenic purpura and primary atypical pneumonia are also reported in children. It may cause encephalopathy, meningitis, radiculitis, polyneuritis, or myelitis with paraplegia.[8] All of these patients make gradual, normal recoveries in one to six months.

The skin test is most specific for diagnosis.[9,10] It is positive in 90% of the cases. Multiple antigen should be used. This antigen is not commercially available but can be obtained from Dr. Margileth's laboratory. All aspirated pus from the affected nodes should be saved to prepare test antigen. If the test is not positive in four weeks with two different antigens, then cat scratch disease can be excluded and lymph node biopsy is done to exclude other benign or malignant conditions.[11]

Cat scratch disease is a self-limiting

condition, hence treated symptomatically. There is no role of antibiotics and steroids. It has to be differentiated from other neck masses like tularemia, which can be transmitted by cats, thyroglosgal cysts, cystic hygromas, lymphomas, Hodgkin's disease, sarcoidosis, and other benign and malignant tumors of the neck. With the discovery of specific bacteria, it is hoped that early diagnosis will be facilitated and that specific therapy will be promptly instituted.

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Transmission of HTLV III/LAV Infection

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PUBLIC AWARENESS of the disease known as acquired immunodifficiency syndrome (AIDS) has rapidly increased since it was first described in 1981. Although AIDS appeared to many as a mysterious disease that might strike at random, it first appeared almost exclusively in homosexual men, parenteral drug users, hemophiliacs, recipients of blood transfusions and infants of high risk parents.[1]

This epidemiology led many to assume that the etiology of the AIDS illness was an infectious agent that was transmitted similarly to hepatitis B. This awareness led to concern that blood transfusions could transmit the infectious agent and, in 1983, even before the virus was first detected, the Public Health Service and others warned against individuals in high risk groups donating blood. It was also suspected that other blood products made from large donor pools such as Factor XIII concentrates, ISG, HIBIG and the then new hepatitis B vaccine, Heptavax, could be a source of AIDS infection.

The cause of AIDS was found to be an RNA retrovirus related to the slow viral agent of scrapie in sheep. It is currently known as Human T-lymphotrophic Virus Type III/Lymphadenopathy-associated Virus (HTLV III/LAV).[2,3,4,5] It infects and subsequently destroys the helper lymphocytes (T4 lymphocytes). This virus was shown to also infect other leukocytes and the central nervous system.[6] It is, however, fragile outside of cells. This helps to explain why the modes of transmission are basically limited to sexual intercourse, injection of contaminated blood products, and from mother to newborn.[1]

With the development of tests for antibodies to the HTLV III/LAV virus, commercial Factor VIII was found to have spread the virus to a high percentage of those hemophiliacs who had used the product on a regular basis.[7] Immune serum globulin, hepatitis B immune globulin (HBIG) and Heptavax were subsequently found, however, not to transmit the virus. The fragile virus is easily inactivated during the manufacturing of the hepatitis B vaccine. The reasons for the lack of transmission by the immune globulins have only recently become known.

The tests for antibodies to the HTLV III/LAV virus also demonstrated risk factors that increased the likelihood of any individual within one of the classic high risk groups being exposed to the virus.[8]

Homosexual men who live in areas with a high prevalence of HTLV III/LAV infection, have a large number of partners or practice receptive anal intercourse have an even higher rate of infection. Homosexual men living in low risk areas who have homosexual contact with persons from high risk areas also have increased rates of infection over those with no such contact.

Parenteral drug users who live close to an endemic region such as New York City and inject frequently are also more likely to be infected.[9]

Hemophiliacs have been infected proportionately to their need for factor concentrate from commercial sources from approximately 1980 to 1984.[7]

The blood recipient's risk of infection has been related to a large number of units being transfused and/or transfusion of blood from a high risk donor. Despite the screening of all blood for transfusion, it is still considered important that all individuals at increased risk of HTLV III/LAV infection be excluded as blood donors, because individuals with recent infection who are viremic may not have yet become seropositive. In addition, the tests for antibodies to HTLV III/LAV are not perfect, and a few false-negative responses will occur in the more than 10 million units of blood and plasma donated annually.

Mothers may become infected with the HTLV III/LAV either because they are themselves in a high risk group or because they have had sexual contact with an infected individual. Transmission of the virus may occur from the mother to the child perinatally by transfer of body fluids or later by lymphocyte laden breast milk.[10,11]

As more information became available, other groups were found to have HTLV III/LAV infection and the routes of transmission are variations on the same themes.

Adults who have heterosexual contact with a risk group member, an increased number of heterosexual contacts, frequent prostitute contact, or needle stick exposure are also at higher risk of infection than the general population. In many parts of central Africa promiscuous heterosexual activity appears to be the main mode of transmission, and the distribution of HTLV III/LAV infection is almost equal between the sexes.[1]

Another mode of transmission which has already caused seroconversion in some women is artificial insemination.[12] It is recommended that artificial insemination programs test donors for antibody to HTLV III/LAV at the time

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of donation and again in three to six months since transmission may precede seroconversion early in the infection.[13]

Human milk may also have the potential to transmit the virus, and some milk bank programs are screening donors.

Transplantation of renal, hepatic, cardiac, pancreatic, corneal and osseous tissues have been predicted to carry a varying but significant risk of transmission of the HTLV III virus. Due to the urgent nature of some transplantation situations, there may be very little time for testing the potential donor.

Tears and saliva from infected individuals have been of concern but are now known to have very low viral isolation rates.[14] They have been shown in family studies to have a very low potential for virus transmission.[1,15] However, good hygiene and protecting open skin or mucous membrane lesions from any body secretion would seem prudent.

Most observers agree that AIDS is a new infection for man and it is spreading in a virgin population. If the transmission of the virus continues to escalate as it has in the recent past, a great number of persons will eventually become infected.

The number of new cases of HTLV III/LAV-related diseases (such as AIDS, AIDS-related complex, secondary cancers, or progressive CNS degeneration) just in persons already infected with the virus will continue to rise dramatically due to the variable but long latent period of the infection. Therefore, the numbers of people eventually affected in their lifetime by a disease due to HTLV III/LAV infection may be extremely large.

In the near future, the only available and practical method of dealing with the AIDS epidemic is to interrupt the transmission of the virus.[16]

It is now known that the majority of individuals infected with the HTLV III/LAV are asymptomatic.[3,17] As would be expected, this asymptomatic majority of infected individuals can and has been shown to transmit the infection.[11] Therefore, to successfully interrupt virus transmission, it is necessary that both symptomatic and asymptomatic (largely unrecognized) carriers be involved in the process.

Successful reduction of new cases of HTLV III/LAV infection will probably result from avoidance of parenteral drug abuse and promiscuous heterosexual and homosexual intercourse.

The public has been very concerned about AIDS transmission and now HTLV III/LAV transmission. Much of this fear is the result of inadequate knowledge. Caution is warranted, however, and it is necessary to carefully evaluate new medical procedures and therapies for the potential of virus transmission. Any situations in which transmission of living cells and/or the injection of body fluids occur may have the potential for the transmission of the HTLV III/LAV virus.[10]

Patients, from the "worried well" to the AIDS victim, require education about HTLV III/LAV transmission, infection and disease. Physicians providing care for infected or at risk individuals should be familiar with the specific characteristics of the syndromes and provide patients with accurate counseling regarding transmission risk factors.

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Newborn Screening Tests

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Indiana Law Requires That Newborn Infants Be Screened for Six Hereditary Disorders. The Author Reviews These Potentially Damaging Disorders, as Well as Several Others, and Discusses the Need for Quality Control of Laboratory Tests and Follow-up . . .

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MASS SCREENING for potentially damaging disorders can reduce morbidity and mortality and be cost-effective. On July 1, 1985, it became law in Indiana[1] that all newborn infants must be screened for six hereditary disorders. Hemoglobinopathies, galactosemia, maple syrup urine disease and homocystinuria were added to the previous screening requirements for phenylketonuria and hypothyroidism. Diseases appropriate for neonatal screening generally are not apparent at birth, can be diagnosed by simple testing and are amenable to treatment. The six disorders listed above will be reviewed and several other diseases that can be detected by screening will be presented.[2]

Phenylketonuria

Phenylketonuria (PKU) was the first of the neonatal disorders to be screened. This metabolic disorder was first described in 1934 and is the result of an absent or altered liver enzyme phenylalanine hydroxylase. Patients with classic PKU have serum phenylalanine levels over 20 mg/dL, decreased serum tyrosine levels, and increased phenylalanine and its metabolites in the urine. Clinically, patients with PKU present with profound mental retardation, seizures, psychotic behavior and eczema. The treatment, a low phenylalanine diet, is effective only if started within the first months of life. The worldwide incidence of classic PKU is one in 10,000 newborns.

Milder forms of hyperphenylalanine have been described. Serum phenylalanine levels in these patients range from 4 to 20 mg/dL. These patients generally are not clinically affected and do not require dietary treatment.

Both threshold (Guthrie test) and quantitative methods (chromatography) are acceptable for PKU screening. The appropriate time for obtaining the specimen is controversial. With early nursery discharges and early specimen collection, a significant number of patients with PKU could be missed. Therefore, it has been recommended by the Committee on Genetics of the American Academy of Pediatrics that neonates tested before 24 hours of age should be rescreened before three weeks of age.[3,4]

Congenital Hypothyroidism

Hypothyroidism screening began in Canada in 1973. Congenital hypothyroidism is relatively common (one in 4,000 newborns) and is amenable to early, uncomplicated treatment. Untreated, patients with this disorder develop cretinoid features and mental retardation within months after birth.

Controversy exists as to whether screening should be implemented with TSH alone or use T_4 levels with TSH back-up. Screening using T_4 levels lacks specificity since many premature or ill newborns have depressed T_4 levels. Alternatively, TSH screening is more expensive and will miss cases of secondary hypothyroidism. Both are radioimmunoassay tests done with a dried blood specimen on filter paper.

Galactosemia

Classic galactosemia is due to a deficiency of the enzyme galactose-1-phosphate uridyltransferase. Galactose cannot be metabolized and accumulates in patients with this disorder. After the initiation of feeds containing lactose, babies with galactosemia develop vomiting, liver disease, cataracts and mental retardation. Treatment involves eliminating galactose and lactose from the diet. The frequency of classic galactosemia is about one in 50,000.

Galactosemia can also be due to defi-

ciencies of galactokinase and uridine diphosphate-galactose-4-epimerase. These disorders are not as severe clinically as classical galactosemia.

Screening tests generally either detect elevated galactose or galactose-1-phosphate levels or measure the presence or absence of enzyme activity.

Maple Syrup Urine Disease

First described in 1954, maple syrup urine disease presents in the first week of life with feeding difficulties, vomiting and hypertonicity. Untreated, the disorder can result in seizures, coma or death, or severe mental and motor retardation in those who survive. Screening tests for this rare disorder (worldwide incidence is about one in 225,000) detect the elevation of leucine that results from deficient decarboxylation of branched-chain keto acids. Treatment consists of reducing the dietary intake of leucine.

Homocystinuria

In homocystinuria, homocysteine and methionine accumulate in the blood and urine due to a deficiency of the enzyme cystathionine synthase. Patients with homocystinuria present with dislocated optic lens, osteoporosis, thinning and lengthening of the long bones, mental retardation and thromboembolisms. Treatment consists of pyridoxine (approximately half of the cases will respond) or low methionine, cystine-supplemented diets.

Routine screening based on elevated methionine levels may miss about half of the cases of homocystinuria since it may take four to six weeks for blood methionine levels to rise sufficiently for reliable detection.

The incidence of homocystinuria is approximately one in 200,000.

Hemoglobinopathies

Several clinically significant hemoglobinopathies can be detected by newborn hemoglobin electrophoresis screening: sickle cell anemia, homozygous Hb C disease, Hb SC disease, sickle cell/B-thalassemia and a-thalassemia. Early diagnosis of sickle cell disease offers several advantages: provide opportunity for prophylaxis against infection and permit prompt treatment of clinical manifestations as well as genetic counseling. In the general population, approximately one in 1,000 have clinically significant hemoglobin disorders.

Other Disorders

There are several other disorders, albeit rare, that can be diagnosed in the neonatal period and for which early treatment offers a cure or at least amelioration of symptoms. Biotinidase deficiency, with a frequency of about one in 48,000 newborns, is treatable with biotin; if left untreated, it can result in severe neurological dysfunction, coma or death. Several countries and states screen for congenital adrenal hyperplasia. This disorder has an incidence of about one in 10,000 newborns and early diagnosis and treatment can prevent later symptomatology. Several approaches, including a dried blood spot immunoreactive trypsin test, have been advocated for newborn screening for cystic fibrosis. Although there is no apparent cure for cystic fibrosis, earlier diagnosis may effect earlier intervention and decreased morbidity, and permits appropriate genetic counseling of parents before further pregnancies are considered. Finally, muscular dystrophy can be screened for with creatine kinase levels. Again, the absence of proven effective therapy argues against screening for this disorder, but the opportunity for family genetic counseling does provide some support for screening for muscular dystrophy.

Screening Programs

Successful screening programs are characterized by the following factors.[5]

1. The entire target population must be tested.

2. There should be a minimal number of false-negative results, i.e., most of the affected individuals should be detected.

3. There should be a minimal number of false-positive results, i.e., most of the nonaffected individuals should have negative results.

4. Follow-up must be included, not only for confirming the diagnosis but for initiating appropriate treatment.

5. The benefits should exceed the costs, i.e., health dollars should be saved by early diagnosis.

Parents should be aware of newborn screening, and babies with positive results should be promptly identified and the result confirmed. Appropriate sampling, including optimal timing, and meticulous methodology are essential.[6] Likewise, follow-up with appropriate experts is essential.

Currently Indiana is evaluating its screening program. One of the issues being addressed is quality control of the laboratory tests. Many states have developed regionalized laboratories for newborn screening in order to improve the accuracy and reliability of test results. Another major issue is follow-up. Diagnosing a disorder without having funds or services available for treatment is counterproductive and a waste of money.

Mass neonatal screening, if done properly, can indeed benefit our newborns.

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Cardiac Pathology in the Sudden Death of an Extremely Obese Person

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Abstract

A case of sudden death of a 45-year-old, extremely obese woman is reported. The findings of cardiac pathology include biventricular hypertrophy, interstitial myocardial fibrosis, and focal loss of cross striations of the myocardial fibers. These changes are consistent with chronic myocardial ischemia with acute exacerbation secondary to relatively inadequate blood supply to a hypertrophic heart in association with obesity. The immediate cause of death is probably due to cardiac arrhythmia secondary to acute cardiac decompensation.



FIGURE 1: The heart is globular in shape and is markedly enlarged. The heart weighs 450 gm. The epicardial fat is slightly increased.

THE PREVALENCE OF hypertension, arteriosclerotic heart diseases, angina pectoris, and the mortality of myocardial infarction increases significantly with obesity.[1] Even in his aphorisms on health and disease, Hippocrates stated that "sudden death is more common in those naturally fat than in the lean."[2] The following is a case report on cardiac pathology in sudden death of an extremely obese person with a brief discussion of cardiovascular pathophysiology in obesity and review of the literature.

Case Report

A 45-year-old housewife complained of chest pain and dyspnea while doing housework in the kitchen. She had no previous history of hypertension or



FIGURE 2: Cross section of the heart shows biventricular hypertrophy. The thickness of the left ventricle is 2.0 cm, and the right ventricle 0.8 cm. Patchy areas of myocardial fibrosis (arrowheads) are present in the posterior wall of the left ventricle.

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FIGURE 3: Microscopically, the left ventricle shows marked interstitial myocardial fibrosis (asterisk) and hypertrophy of the myocardial fibers. (H&E stain, x100)

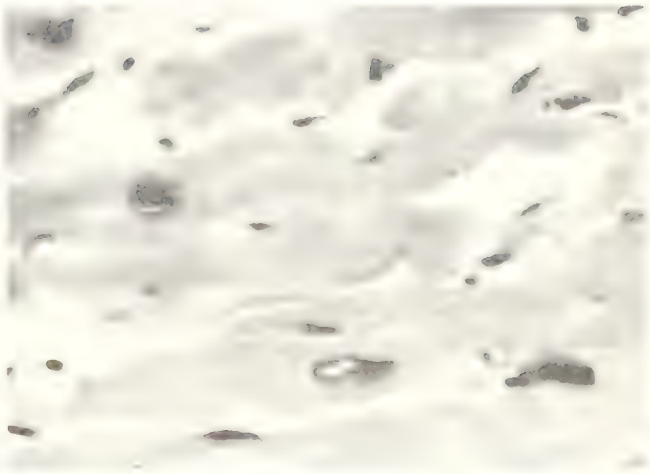


FIGURE 4: High power view shows wavy myocardial fibers with rectangular shaped, hyperchromatic nuclei and loss of cross striations of the myocardial fibers. (H&E stain, x400)

cardiovascular disease except for occasional dyspnea on exertion. She was sent to the emergency room and died shortly afterward.

At autopsy, her body length was 63 in. and the body weight 370 lb. The heart was globular in shape and markedly enlarged. The epicardial fat was slightly increased. The heart weighed 450 gm (*Fig. 1*). The coronary arteries showed mild arteriosclerotic changes with segmental 5 to 10% narrowing of the lumen. Multiple cross sections of the heart revealed biventricular hypertrophy, the left ventricular wall measuring 2.0 cm in thickness and the right 0.8 cm. There were patchy areas of myocardial fibrosis in the posterior wall of the left ventricle (*Fig. 2*). Both the right and the left ventricles were dilated.

Microscopically, the sections of the left ventricle showed focal interstitial myocardial fibrosis (*Fig. 3*) and evidence of marked myocardial hypertrophy characterized by large, rectangular shaped, hyperchromatic nuclei of the myocardial fibers. Wavy myocardial fibers with focal loss of cross striations were also noted (*Fig. 4*). The lungs were markedly edematous and congested.

Discussion

The weight of the normal adult heart, although it varies, averages 300 gm in men and 250 gm in women, or about 0.45% and 0.4% of the body weight, respectively.[3] Smith and Willius, in a postmortem study on 136 obese persons, found that the heart weight increased with increasing body weight. The average heart weight for the obese men was 444 gm and for the obese women 345 gm. The average ratio of cardiac weight to body weight in the overweight persons was 0.38%. They also reported an excess of epicardial fat in 95% of the cases. They postulated that "adiposity of the heart" (fatty infiltration of the myocardium) might impair the cardiac function.[4]

In a study of cardiac pathology of 12 normotensive, obese persons, Amad, *et al.* found that all of them had myocardial hypertrophy; six had mild perivascular or interstitial myocardial fibrosis; and only three had mild fatty infiltration of the myocardium.[5] Warnes and Roberts, in a similar study, reported biventricular hypertrophy and dilatation in 12 extremely obese persons. None of them had fatty infiltration of the heart. Five patients died suddenly of undetermined causes, two of right-sided congested heart failure, one of acute myocardial infarction, one of aortic dissection, one of intracerebral hemorrhage, one of drug overdose, and one after ileal bypass. They also found these obese persons did not have more coronary atherosclerosis than expected at their ages.[6]

Cardiac hypertrophy in marked obesity may be secondary to severe hypoxemia of chronic hypoventilation[7] and increased left ventricular stroke work by disparate hemodynamic mechanism.[8] Prolonged hypoxemia and ventricular overload may result in cardiac decompensation and congestive heart failure.

In the present case, the findings of cardiac pathology include biventricular hypertrophy, interstitial myocardial fibrosis, and focal loss of cross striations of the myocardial fibers. These changes are the results of chronic myocardial ischemia with acute exacerbation secondary to relatively inadequate blood supply to a hypertrophic heart in association with obesity. The immediate cause of death in this case is probably due to cardiac arrhythmia secondary to acute cardiac decompensation.

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	cimetidine 400 mg h.s.	23%	34%	43%	66
UK, Ireland, Australia[2]	ranitidine 150 mg h.s.	8%‡	14%‡	23%‡	243
	cimetidine 400 mg h.s.	21%	34%	37%	241

*p=0.02
†p=0.01
‡p<0.004
%=life-table estimates
All patients were permitted prn antacids for relief of pain.

These two trials used the currently recommended dosing regimen of cimetidine (400 mg h.s.) and ranitidine (150 mg h.s.). A comparison of other dosing regimens has not been studied.

The studied dosing regimens are not equivalent with respect to the degree and duration of acid suppression or suppression of nocturnal acid.

The superiority of ranitidine over cimetidine in these trials indicates that the dosing regimen currently recommended for cimetidine is less likely to be as successful in maintenance therapy.

Convenient once-a-night dose with a low incidence of side effects[3]

Headache, sometimes severe, seems to be related to ranitidine administration. Other side effects have been reported; for a complete listing, see the **ADVERSE REACTIONS** section in the Brief Summary.

No significant interference with the hepatic cytochrome P-450 enzyme system at recommended doses

ZANTAC 150 mg has no significant drug interactions with theophylline, phenytoin, or warfarin. The bioavailability of certain medications whose absorption is dependent on a low gastric pH may be altered when ZANTAC or other medications that decrease gastric acidity are administered.

Zantac 150
ranitidine HCl/Glaxo 150 mg tablets

One tablet at bedtime
for maintenance

See next page for references and
Brief Summary of Product Information.

Glaxo / ROCHE

CONFIRMED

Zantac 150

ranitidine HCl/Glaxo 150 mg tablets

One tablet at bedtime for maintenance therapy in healed duodenal ulcer patients

References:
1 Silvis SE, Griffin J, Hardin R, et al Final report on the United States multicenter trial comparing ranitidine to cimetidine as maintenance therapy following healing of duodenal ulcer *J Clin Gastroenterol* 1985;7(6) 482-487
2 Gough KR, Korman MG, Bardhan KD, et al Ranitidine and cimetidine in prevention of duodenal ulcer relapse A double blind, randomised, multicentre, comparative trial *Lancet* 1984;ii 659-662
3 Data available on request, Glaxo Inc

ZANTAC® 150 Tablets (ranitidine hydrochloride)
ZANTAC® 300 Tablets (ranitidine hydrochloride)

BRIEF SUMMARY OF PRODUCT INFORMATION

See complete product information before prescribing The follow ing is a brief summary

INDICATIONS AND USAGE: ZANTAC® is indicated in
1 Short term treatment of **active duodenal ulcer** Most patients heal within four weeks
2 **Maintenance therapy** for duodenal ulcer patients at reduced dos age after healing of acute ulcers
3 The treatment of **pathological hypersecretory conditions** (eg, Zollinger Ellison syndrome and systemic mastocytosis)
4 Short term treatment of **active, benign gastric ulcer** Most patients heal within six weeks and the usefulness of further treat ment has not been demonstrated
5 Treatment of **gastroesophageal reflux disease (GERD)** Symptom atic relief commonly occurs within one or two weeks after starting therapy Therapy for longer than six weeks has not been studied

In active duodenal ulcer, active, benign gastric ulcer, hyper-secretory states, and GERD, concomitant antacids should be given as needed for relief of pain

CONTRAINDICATIONS: ZANTAC® is contraindicated for patients known to have hypersensitivity to the drug

PRECAUTIONS: General: 1 Symptomatic response to ZANTAC® therapy does not preclude the presence of gastric malignancy 2 Since ZANTAC is excreted primarily by the kidney, dosage should be adjusted in patients with impaired renal function Caution should be observed in patients with hepatic dysfunction since ZANTAC is metabolized in the liver

Laboratory Tests: False positive tests for urine protein with Multistix® may occur during ZANTAC therapy, and therefore test ing with sulfosalicylic acid is recommended

Drug Interactions: Although ZANTAC has been reported to bind weakly to cytochrome P 450 in vitro, recommended doses of the drug do not inhibit the action of the cytochrome P-450-linked oxy genase enzymes in the liver However, there have been isolated reports of drug interactions which suggest that ZANTAC may affect the bioavailability of certain drugs by some mechanism as yet un identified (eg, a pH dependent effect on absorption or a change in volume of distribution)

Carcinogenesis, Mutagenesis, Impairment of Fertility: There was no indication of tumorigenic or carcinogenic effects in lifespan stud ies in mice and rats at doses up to 2,000 mg/kg/day

Ranitidine was not mutagenic in standard bacterial tests (*Salmonella, E coli*) for mutagenicity at concentrations up to the maximum recommended for these assays

In a dominant lethal assay, a single oral dose of 1,000 mg/kg to male rats was without effect on the outcome of two matings per week for the next nine weeks

Pregnancy: *Teratogenic Effects: Pregnancy Category B:* Reproduc tion studies have been performed in rats and rabbits at doses up to 160 times the human dose and have revealed no evidence of impaired fertility or harm to the fetus due to ZANTAC There are, however, no adequate and well-controlled studies in pregnant women Because animal reproduction studies are not always pre dictive of human response, this drug should be used during preg nancy only if clearly needed

Nursing Mothers: ZANTAC is secreted in human milk Caution should be exercised when ZANTAC is administered to a nursing mother

Pediatric Use: Safety and effectiveness in children have not been established

Use in Elderly Patients: Ulcer healing rates in elderly patients (65 to 82 years of age) were no different from those in younger age groups The incidence rates for adverse events and laboratory abnormalities were also not different from those seen in other age groups

ADVERSE REACTIONS: The following have been reported as events in clinical trials or in the routine management of patients treated with oral ZANTAC® The relationship to ZANTAC therapy has been unclear in many cases Headache, sometimes severe, seems to be related to ZANTAC administration

Central Nervous System: Rarely, malaise, dizziness, somnolence, insomnia, and vertigo Rare cases of reversible mental confusion, agitation, depression, and hallucinations have been reported, pre-dominantly in severely ill elderly patients

Cardiovascular: Rare reports of tachycardia, bradycardia, and pre-mature ventricular beats

Gastrointestinal: Constipation, diarrhea, nausea/vomiting, and abdominal discomfort/pain

Hepatic: In normal volunteers, SGPT values were increased to at least twice the pretreatment levels in 6 of 12 subjects receiving 100 mg qid IV for seven days, and in 4 of 24 subjects receiving 50 mg qid IV for five days With oral administration there have been occasional reports of reversible hepatitis, hepatocellular or hepatocanalicular or mixed, with or without jaundice

Musculoskeletal: Rare reports of arthralgias.

Hematologic: Rare reports of reversible leukopenia, granulocy-topenia, thrombocytopenia, and pancytopenia

Endocrine: Controlled studies in animals and man have shown no stimulation of any pituitary hormone by ZANTAC and no antiandro-genic activity, and cimetidine-induced gynecomastia and impo-tence in hypersecretory patients have resolved when ZANTAC has been substituted. However, occasional cases of gynecomastia, impotence, and loss of libido have been reported in male patients receiving ZANTAC, but the incidence did not differ from that in the general population

Integumental: Rash, including rare cases suggestive of mild ery-thema multiforme, and, rarely, alopecia

Other: Rare cases of hypersensitivity reactions (eg, bronchospasm, fever, rash, eosinophilia) and small increases in serum creatinine

DOSAGE AND ADMINISTRATION: Active Duodenal Ulcer: The current recommended adult oral dosage is 150 mg twice daily. An alter-nate dosage of 300 mg once daily at bedtime can be used for patients in whom dosing convenience is important. The advan-tages of one treatment regimen compared to the other in a particu-lar patient population have yet to be demonstrated

Maintenance Therapy: The current recommended adult oral dosage is 150 mg at bedtime

Pathological Hypersecretory Conditions (such as Zollinger-Ellison Syndrome): The current recommended adult oral dosage is 150 mg twice a day In some patients it may be necessary to administer ZANTAC® 150-mg doses more frequently. Doses should be adjusted to individual patient needs, and should continue as long as clini-cally indicated Doses up to 6 g/day have been employed in patients with severe disease

Benign Gastric Ulcer: The current recommended adult oral dosage is 150 mg twice a day

GERD: The current recommended adult oral dosage is 150 mg twice a day

See full prescribing information for dosage adjustment for patients with impaired renal function

HOW SUPPLIED: ZANTAC® 300 Tablets (ranitidine hydrochloride equivalent to 300 mg of ranitidine) are yellow, capsule-shaped tablets embossed with "ZANTAC 300" on one side and "Glaxo" on the other They are available in bottles of 30 (NDC 0173-0393-40) and unit dose packs of 100 tablets (NDC 0173-0393-47)

ZANTAC® 150 Tablets (ranitidine hydrochloride equivalent to 150 mg of ranitidine) are white tablets embossed with "ZANTAC 150" on one side and "Glaxo" on the other. They are available in bottles of 60 tablets (NDC 0173-0344-42) and unit dose packs of 100 tablets (NDC 0173-0344-47).

Store between 15° and 30°C (59° and 86°F) in a dry place. Protect from light. Replace cap securely after each opening.

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Glaxo
Glaxo Inc
Research Triangle Park, NC 27709

Medicine's Lighter Moments

TED L. GRISELL, M.D.
Indianapolis



THE BULL

AN ANECDOTE that occurred not too many years ago serves to illustrate the behavior and thinking of a large class of our populace. This episode occurred in a farming community in which there was a dairy farmer who had a number of cows that were producing. As is well known, in order to maintain the production, it is required that they be bred from time to time to add fresh supply and to increase the number of animals in the production line.

It was somewhat difficult at that time to breed the cows at the proper interval because the bull that provided this service was several miles down the highway. That meant either shipping or driving the animals some distance to have the service rendered. After putting up with this for some years, the farmer who was in charge of the dairy decided he should have his own bull and, in order to get better breeding, the bull that he had in mind was quite expensive. He spent some $25,000 for the bull and proudly turned it into the field with his breeding cattle.

Unfortunately, the bull seemed to have lost interest in the feminine contingency of the dairy farm and did nothing but eat grass and lie around in a lazy fashion. As a result, the frustrated farmer called the veterinarian. The veterinarian came out some distance from the local city and gave the bull a shot. But the bull still displayed no interest in his husbandly duties.

The poor farmer then mentioned his difficulties to a neighbor. His neighbor suggested he go down to the river where a rather nondescript individual by the name of George lived. He said George was well known for his skills in handling animals and in curing them of certain diseases, and he thought maybe he had some technique that might restore the integrity of the bull's breeding capabilities.

So, the dairy farmer proceeded to the river bank and found George. George took him into a little shed, got a large bottle, filled it with a little bit of this and a little of that, a few drops of a medication and a splash of another, shook it in the big bottle and handed it to the farmer. He said, "Now, go give your bull about half of this and see if that doesn't help."

As soon as he got back from George's, the farmer got the bull down and fed him about half of the bottle of medicine that he was given. When the bull got up, he not only began to service the cows that he was supposed to, but he managed to service two or three of them twice. Oh, the dairy farmer was pleased and proud of his newfound cure.

The next day, he was telling his neighbor of the miraculous recovery of the capabilities of his expensive bull. The neighbor asked, "What did George give you for his medication?" The farmer replied, "Well, I really don't know, but it tastes like licorice."

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EDITORIALS

Prosthesis Problem: A Case Report

Commentary

At the time of this writing, the patient (F.S.) is 64 years of age. He is a Caucasian man, married for the second time. He is a retired automotive factory worker, a union member, Protestant, Scotch-Irish ethnic background.

At the age of 6, on entrance to first grade, it was apparent that his eye sight was dismal. He was found to be extremely near-sighted and required the assistance of thick myopic lenses at all times from then on.

At age 7, he developed a right inguinal hernia. This was repaired.

At age 15, because he was a constant candy muncher, all of his teeth became carious and had to be extracted and full denture prosthetic units were installed.

His right inguinal hernia recurred at age 22, and was again repaired, and again it recurred at age 35. This time the surgeon implanted metal mesh to prevent repeat herniation, and also it was necessary to remove the right testicle and implant a prosthetic plastic gonad.

At the time of this metal mesh implant, the patient was living next to an AM radio station transmitter and the metal mesh received the electromagnetic signals, such that his groin often vibrated audibly and melodically to loud rock and roll music. This problem required that he move, because the music disturbed the sleep of himself and his wife.

Patient went completely bald at the age of 30, and had transplant of the small peripheral scalp divots. This was done successfully.

Patient developed progressive osteoarthritis in hips and knees in his 50's. This was a familial trait. He showed the characteristic HLA-B27 antigen in his blood. He required bilateral artificial hip and knee implants.

The patient went completely deaf at age 52. This was due to familial otosclerosis. He had bilateral stapedectomies and artificial tympanic membrane implants, which were unsuccessful, and then had to purchase bilateral hearing aids which were partially successful.

Patient developed complete AV block at the age of 54, and had a pacemaker implant. After this, he frequently passed out in the company cafeteria until it was realized that they had a large microwave unit there.

Patient developed cataracts at age 56, and had surgery on them and bilateral lens implants.

The patient developed severe brittle insulin-dependent diabetes at age 60, and had an automatic insulin pump implant.

At age 62, the patient developed diabetic visceral neuropathy with complete impotence. His second wife, who was 25 years younger and who, incidentally, had had breast augmentation implants, demanded he get a penile pump prosthesis, and this was done successfully.

This brings us to the present time in this case report, when the patient is age 64, and has developed progressively disabling Alzheimer's syndrome. He has had extensive loss of intellectual functioning, and can still barely figure out how to pump up his penile prosthesis, but can no longer figure out how to let the pressure down in the prosthesis. His wife, who is totally nonmechanical, at first tolerated this situation. But there came a time when she sustained rather severe sheet burns, then she laboriously read through the manual of instructions on the pump prosthesis, and was finally able to deflate the device.

We can only speculate what future artificial devices this patient may need.—**Philip Ball, M.D., Muncie, Ind.**

Dr. Grisell's Tales Stir Reader Response

(In July, INDIANA MEDICINE began publishing a series of articles by Dr. Ted L. Grisell of Indianapolis. The series, "Medicine's Lighter Moments," has evoked many reader responses. Here are two of them.)

Dear Dr. Grisell,

After reading your article on "The Mouse" (July 1986), I could not resist writing. When were you at Fletcher's? I was sort of a resident there in 1933-35-36 after finishing internship at I.U. Med Center in July '33.

I remember so well some of the patients, especially "Massey" who had an uncanny flair for numbers and who made calendars years in advance, old Isaac who ran the hydraulic elevator, the sisters Robb and Grace Naelle (still living), as well as Drs. Mary and Urbanna Spink—and the sisters who managed the hotels and the one whose husband had been ambassador to the King of Siam.

I stayed almost until our first daughter was born, then went back until the second daughter came along. I felt obligated to help out as Dr. Mary had had surgery for a ruptured gall bladder and she had a long rough recovery.

I do not remember any mice but could share some other stories.

I am still doing F.P. in Lafayette. My husband died in 1979 (did EENT).

I would be pleased to hear from you and more about Fletcher Sanitarium. Yours truly,—**Mary (Keller) Ade, M.D., Lafayette, Ind.**

Dear Dr. Grisell,

INDIANA MEDICINE arrived today and during my secretary's lunch hour I proceeded to read "Medicine's Lighter Moments" about The Cat (August 1986).

I laughed so hard the tears rolled. If anyone would have entered this office, I'm sure they would have thought I had lost my mind. I have made a copy for my husband to read.

Thank you for making a very trying week end on such delightful humor. I certainly do enjoy your articles and look forward to more. Sincerely,—**Rose Vance, Executive Director, St. Joseph County Medical Society**

Let Us Know!

Send your news items and comments to the Editor, INDIANA MEDICINE, 3935 N. Meridian St., Indianapolis 46208.

Dietitian Disputes 'Take a Pill' Advice

Letter to the Editor

The article and editorial on the typical American diet in the July 1986 issue offered some good insights into the way we eat. Generally, the American diet is too high in fat, sugar, sodium, and too limited in complex carbohydrates and fiber. I would, however, like to comment on several specific points.

The Four Food Group guidelines suggest the MINIMUM number of servings that should be consumed daily. Calorie intake, using the fewest number of servings, would range from 1200-1400 kcals per day, which would probably be a weight reduction diet for most adults. Caloric requirements for healthy males, ages 23 to 50, for example, are 2300-3100 kcals.

In fact, registered dietitians and other nutrition specialists emphasize that the Four Food Group system will provide 80 to 100% of the Recommended Dietary Allowances (RDA) when consuming 2000 kcals per day. If one does not increase the number of suggested servings, I'd agree a multivitamin/mineral supplement is indicated as it is for most other weight reduction regimens.

The second issue is that in the survey, individuals' daily intakes were compared to the U.S. Recommended Daily Allowances (U.S. RDA). These are nutrient recommendations based on the 1965 RDA's using the *highest* allowance for non-pregnant, non-lactating adults. This means that the U.S. RDA values provide a significant margin of safety. (Remember that the RDA has a safety margin built in.)

Lastly, the recommendation that a pill is the best answer for "curing" nutrition ailments diminishes the importance of macronutrient needs, cholesterol/saturated fat excesses, fiber needs, trace element requirements and possibly other, as yet, unidentified chemicals in food that may promote health. I believe nutrient supplementation through pills fools individuals into thinking it's acceptable to eat poorly because "I had my supplement today." It's certainly more difficult to change life-styles and eating habits than to swallow a pill, but an effort dietitians believe is worth it!—**Marcia Mitson, RD, MS, Nutrition Supervisor, St. Joseph's Hospital, Fort Wayne**

The Author Replies: 'Used to Feel Same Way'

I have read the letter that Marcia Mitson, RD, sent regarding our article on the "American Diet." I appreciate and understand her comments as I used to feel the same way about nutrition, as do the majority of my colleagues. When my friend Dr. Vaughn, who thrives on researching most any subject, became interested in nutrition, he asked my opinions. Of course, I gave the usual reply, "Don't worry about it. Eat a good balanced diet and you will get all the nutrients you need." But he persisted, "How do you know? Where's the data?" Thus began discussions and study that gradually grew into a project and changed my way of thinking regarding supplementing my diet with vitamin and mineral additions.

Such a project would be easy to implement in most any hospital. Personal computers are relatively inexpensive now. We purchased our program from a computer software company in Oregon, but there are many programmers available who can design a computer program to do these analyses. The data base for the "Nutritive Value of Foods" (Bulletin 72, USDA) is available from U.S. Dept. of Agriculture in an updated version (includes fast foods) on magnetic tape that can be loaded onto a floppy disc for a P.C. Thus, the hospital dietition and the physician could have available a computer print-out of the nutritive value of a patient's diet. This could be done easily and inexpensively and would remove estimations and guess work. We measure laboratory values of blood chemistry and electrolytes to fractions of a percent, but make estimations on the nutrients we ingest.



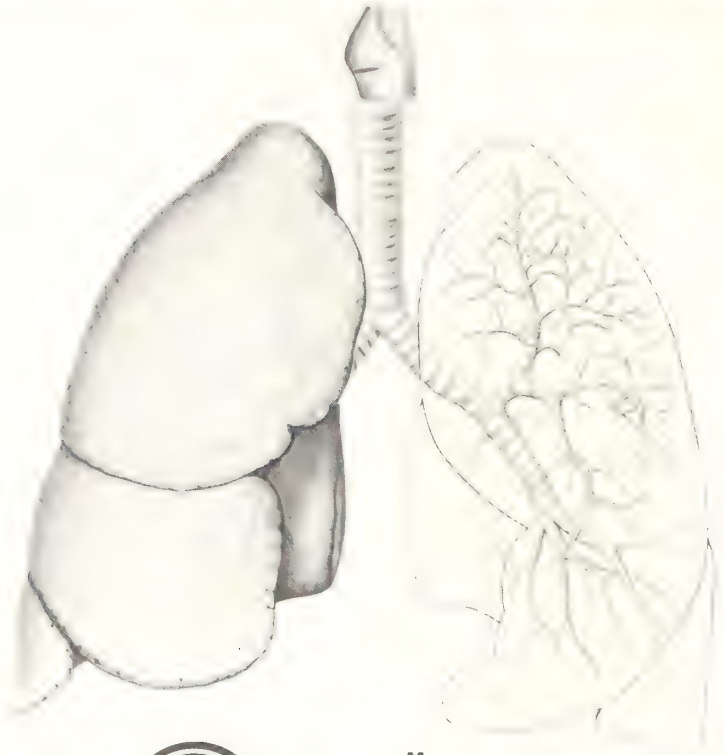
"I think I'll get a second opinion. My neighbor had something like I have about two years ago."

If the recommended daily allowances of nutrients are important and if they can be measured, then why not do so. That was the whole point of our article. It was amazing to me and changed my way of thinking and eating as I kept analyzing diets that looked pretty good, yet found them lacking.

Just a few more comments on my experience in looking for good data on nutrition. It is scarce. It is heavily influenced by vested interests such as The National Dairy Council, American Meat Institute, etc. There are nutrients that are said to be important and essential, yet no good data base exists for them. If our country spent just a fraction of money spent on the Space Program in doing good independent research on nutrition we'd be a much healthier people. One final comment on the trend of hospitals putting in fast food restaurants. This is like the hospital giving an unwritten endorsement of fast foods as being healthful and nutritious. I would expect the nutritionists and dietitians to be up in arms protesting this trend. For the hospital, perhaps the financial bottom line is more important than the bottom line of good health and nutrition.

Our ancestors of long ago did well eating fresh vegetables, fresh fruits, whole grains and, sparingly, lean meat. Over the past hundred years, we've succeeded in processing foods so that, while the nutritive value is low, they look, smell and taste good and sell well.—**William V. Johnson, M.D., Lanesville, Ind.**

Consider the causative organisms...



Ceclor®
cefaclor

250-mg Pulvules® t.i.d. offers effectiveness against the major causes of bacterial bronchitis

Haemophilus influenzae, *H influenzae*, *Streptococcus pneumoniae*, *Streptococcus pyogenes*
(ampicillin-susceptible) (ampicillin-resistant)

Note: Ceclor® is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

Ceclor® (cefaclor)

Summary. Consult the package literature for prescribing information

Indications: Lower respiratory infections, including pneumonia, caused by susceptible strains of *Streptococcus pneumoniae*, *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococci)

Contraindications: Known allergy to cephalosporins

Warnings: CECLOR SHOULD BE ADMINISTERED CAUTIOUSLY TO PENICILLIN-SENSITIVE PATIENTS. PENICILLINS AND CEPHALOSPORINS SHOW PARTIAL CROSS-ALLERGENICITY. POSSIBLE REACTIONS INCLUDE ANAPHYLAXIS.

Administer cautiously to allergic patients.

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics. It must be considered in differential diagnosis of antibiotic-associated diarrhea. Colon flora is altered by broad-spectrum antibiotic treatment, possibly resulting in antibiotic-associated colitis.

Precautions:

- Discontinue Ceclor in the event of allergic reactions to it.
- Prolonged use may result in overgrowth of nonsusceptible organisms.
- Positive direct Coombs' tests have been reported during treatment with cephalosporins.
- In renal impairment, safe dosage of Ceclor may be lower than that usually recommended. Ceclor should be administered with caution in such patients.
- Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.
- Safety and effectiveness have not been determined in pregnancy, lactation, and infants less than one month old. Ceclor penetrates mother's milk. Exercise caution in prescribing for these patients.

Adverse Reactions: (percentage of patients)

Therapy-related adverse reactions are uncommon. Those reported include:

- Gastrointestinal (mostly diarrhea): 2.5%
- Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment.
- Hypersensitivity reactions (including morbilliform eruptions, pruritus, urticaria, erythema multiforme, serum-sickness-like reactions): 1.5%; usually subside within a few days after cessation of therapy. These reactions have been reported more frequently in children than in adults and have usually occurred during or following a second course of therapy with Ceclor. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.
- Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.
- Other: eosinophilia, 2%; genital pruritus or vaginitis, less than 1%.

Abnormalities in laboratory results of uncertain etiology

- Slight elevations in hepatic enzymes.
- Transient fluctuations in leukocyte count (especially in infants and children).
- Abnormal urinalysis; elevations in BUN or serum creatinine.
- Positive direct Coombs' test.
- False-positive tests for urinary glucose with Benedict's or Fehling's solution and Clinitest® tablets but not with Tes-Tape® (glucose enzymatic test strip, Lilly).

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Lilly

Additional information available to the profession on request from Eli Lilly and Company, Indianapolis, Indiana 46285

Eli Lilly Industries, Inc
Carolina, Puerto Rico 00630

600332

CME QUIZ

TO OBTAIN ONE HOUR OF CATEGORY 1 AMA CME CREDIT, answer the following questions by circling the correct answer on the answer sheet below. Complete and clip the application form and mail it to: Indiana University School of Medicine, CME Division, BR 156, 1226 W. Michigan St., Indianapolis 46223.

Home Oxygen Therapy

CONTINUED FROM PAGES 849-853

1. Causes of hypoxemia in children include:
   a. Cystic fibrosis
   b. Bronchopulmonary dysplasia
   c. Chronic aspiration
   d. All of the above
2. Symptoms of hypoxemia in infants and children include all of the following except:
   a. Apnea
   b. Poor school performance
   c. Cough
   d. Feeding difficulties
   e. Irritability
3. Choose the most accurate statement regarding detection of hypoxemia.
   a. Cyanosis is an early indication of hypoxemia.
   b. Diaphoresis, feeding difficulties and failure to thrive suggest hypoxemia in the infant with lung or cardiac disease.
   c. Random arterial blood gases accurately reflect oxygen needs.
   d. Non-invasive methods of measuring oxygenation are rarely accurate or adequate for determining oxygen needs.
4. Conditions for home discharge on oxygen should include all the following except:
   a. Stable home environment
   b. Involvement of home care agencies and visiting nurses
   c. Documented need of the patient for oxygen
   d. Twenty-four-hour nursing care
5. Documentation of the need for oxygen includes all of the following except:
   a. Laboratory evidence of hypoxemia
   b. Physician's statement that patient suffers from a terminal disease
   c. Physician's prescription specifying diagnosis, concentration and flow rate
   d. Physician's estimate of frequency and duration of use
6. Liquid oxygen has the most acceptable:
   a. Reservoir
   b. Safety record
   c. Portable system
   d. Humidifier
7. The main advantage of the oxygen enricher over the other systems is:
   a. Cost
   b. Portability
   c. Humidification
   d. Flow capacity
8. The most acceptable method of oxygen delivery for children is the:
   a. Nasal cannula
   b. Nasal catheter
   c. Oxygen tent
   d. Oxygen mask
9. Safety precautions for the use of oxygen in the home include:
   a. Avoid storage next to a source of heat or ignition
   b. Secure tanks carefully
   c. Avoid smoking near an oxygen source
   d. All of the above
10. The main criterion for discontinuation of oxygen in children is:
    a. Child should be at least two years old
    b. Oxygen saturation greater than 90% during all activities
    c. Resolution of right ventricular hypertrophy on electrocardiogram
    d. Resolution of underlying lung disease

SEPTEMBER CME QUIZ Answers

Following are the answers to the CME quiz that appeared in the September 1986 issue: "Mammography and Ultra-sonography for Breast Cancer Detection," by Valerie P. Jackson, M.D., *et al.*

1. b	6. b
2. c	7. c
3. b	8. c
4. d	9. b
5. c	10. a

Answer sheet for Quiz: (Home Oxygen)

1. a b c d	6. a b c d
2. a b c d e	7. a b c d
3. a b c d	8. a b c d
4. a b c d	9. a b c d
5. a b c d	10. a b c d

I wish to apply for one hour of category 1 AMA Continuing Medical Education credit through the I.U. School of Medicine. I have read the article and answered the quiz on the answer sheet above. I understand that my answer sheet will be graded confidentially, at no cost to me, and that notification of my successful completion of the quiz (80% of the questions answered correctly) will be directed to me for my application for the Physician's Recognition Award of the American Medical Association. I also understand that if I do not answer 80% of the questions correctly, I will not be advised of my score but the answers will be published in the next issue of INDIANA MEDICINE.

Name (please print or type)

Address

Identification number (found above your name on mailing label)

Signature

To be eligible for this month's quiz, send your completed, signed application before Nov. 10, 1986 to the address appearing at the top of this page.



AUXILIARY REPORT

Alfrieda Mackel (Mrs. Frederick)
ISMA Auxiliary President 1986-87

What a timely moment to be able to share with you some thoughts, plans, challenges and "please do's" regarding legislation. Legislative work never rests! Campaign and election work is going on constantly! WE NEED YOU IN OUR ENDEAVORS.

My co-chairman, Vivian Priddy, and I wish to share some of our goals for the Auxiliary year with you. One very important goal is to have as many physicians and spouses involved in the November election as possible. This means we must be "on board" NOW working in the party or for the candidate(s) who best reflects your moral, ethical, medical and political philosophies. How can you be involved? Call the offices of the candidate(s) or party of your choice and offer your services, be your talents in clerical work, telephone work, door-to-door canvassing or passing out campaign materials on election day. The giving of dollars is most important, too. Have you given your share? No one of us should sit at home election day unless we're on the phone helping to get out the vote or trying to influence friends regarding our philosophies.

BE A LOBBYIST! It has been said that the best lobbyist is the individual voter with a conviction. The Indiana General Assembly will go into session early in January 1987. The best time to contact your legislator is before the start of the session. Contact your legislators and congressmen BEFORE they go into session so that they will know who you are and how you feel regarding specific issues. Let them know that you will be watching their votes during the sessions.

We would like to call your attention to some special issues which need your attention and support. Legislation aimed at creating a tobacco-free society in Indiana by the year 2000 will be introduced in the 1987 Indiana General Assembly. Please discuss this issue with your legislators BEFORE they go into session. Help to arrange a program in your local public school system aimed at the goal of a tobacco-free society. The important role physicians and spouses have in educating the public in this area cannot be overemphasized.

The Medicare fee freeze is still a hot subject. Please contact your congressman now, yes, even if you have done it before, asking that the Medicare fee freeze be lifted at the end of 1986.

AUXILIARY ALERT! We need and are striving for a legislative chairman and a "Key Contact" person in every county auxiliary. Please make sure that there is one of each, or an individual who serves in both capacities, in your auxiliary. We need to have a way to contact as many people as possible on very short notice when there are crucial issues to be dealt with or crucial votes to be taken in the General Assembly and U.S. Congress.

Plans for 1987 include a day with our legislators in the third week of March. Auxiliary legislative chairmen and presidents will be notified when that date is set. We look forward to as stimulating a day as we had in 1986. Keep up your good work. WE NEED YOU.—**Anne Schuster (Mrs. Dwight W.), Legislative Chairman**

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Look-Alike and Sound-Alike Drug Names

BENJAMIN TEPLITSKY, R. PH.
Brooklyn, N.Y.

Look-alike and sound-alike drug names can be misinterpreted by a nurse reading doctors' orders or by a pharmacist compounding physicians' prescriptions. Such misunderstandings can result in the administration of a drug not intended by the prescriber. Awareness of such look-alike and sound-alike drug names can reduce potential errors.

	REGONOL	REGROTON
Category:	Muscle relaxant	Antihypertensive
Brand Name:	Regonol, Organon	Regroton, USV
Generic Name:	Pyridostigmine Bromide	chlorthalidone-reserpine combination
Dosage Forms:	Injection	Tablets

	DAUNORUBICIN	DACTINOMYCIN
Category:	Antibiotic	Antibiotic
Brand Name:	Cerubidine, Ives	Mutamycin, Bristol
Generic Name:	Daunorubicin, HC1	Mitomycin
Dosage Forms:	Powder for Injection	Injection

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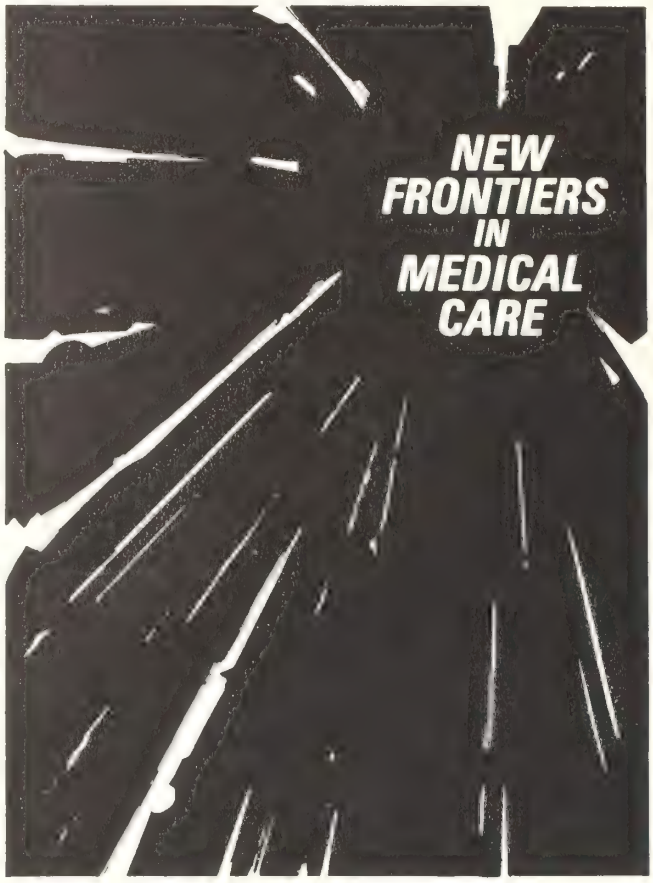
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1986 Annual Meeting

INDIANA STATE MEDICAL ASSOCIATION



October 30,-
November 2, 1986

Thursday - Sunday

Downtown
Hyatt Regency
Indianapolis

Plan to Attend — Your Future Awaits

- House of Delegates Sessions
- Reference Committees
- Medical Section Meetings
- IMPAC Luncheon and Meeting
- 50-Year Club Luncheon
- General Scientific Meeting on
  A. Postmenopausal Osteoporosis and Its Treatment Options
  B. Blood Transfusion Therapy
  (Open To Spouses)
- President's Dinner and Dance —
  BO THORPE and his ORCHESTRA

Discover the many:

New frontiers in medical care

Abridged Schedule of Events



B. DIANE WELLS, M.D. SPENCER
Chairman
Convention Arrangements

137th Annual Convention
Hyatt Regency
One South Capitol
Indianapolis, Indiana
(317) 632-1234

THURSDAY, Oct. 30

9 a.m. . . . . Board of Trustees Breakfast Meeting
10 a.m. . . . . Committee on Rules and Order of Business
10:30 a.m. . . . Luncheon for recipients of the ISMA Physician Community Service Award and Journalism Awards
11:15 a.m. . . . New Delegates Welcoming Meeting
11:30 a.m. . . . Board of Trustees Luncheon
1 p.m. . . . . First Session, House of Delegates
4 p.m. . . . . Small County Delegates Meeting
4 p.m. . . . . Practice Opportunities for Indiana Physicians Reception
5 p.m. . . . . House of Delegates Light Dinner Buffet
6 p.m. . . . . Reference Committee 5 (Misc. Matters)
7 p.m. . . . . Reference Committee 4 (Med. Educ. & Ins.)
8 p.m. . . . . Reference Committee 1 (Reports of Officers)

FRIDAY, Oct. 31

8 a.m. . . . . Hospitality Area and Exhibits open
8 a.m. . . . . Reference Committee 2 (Const. & Bylaws)
9 a.m. . . . . Reference Committee 3 (Legislation)
9: 30 a.m. . . . Reference Committee 6 (AMA Matters)
11 a.m. . . . . IMPAC Luncheon Reception
Noon . . . . . IMPAC Luncheon
Noon . . . . . Fifty Year Club Luncheon
2-5:30 p.m. . . . General Scientific Meeting
Open . . . . . Night on the Town

SATURDAY, November 1

8 a.m. . . . . Board of Trustees Breakfast Meeting
8:30-5 p.m. . . . Medical Section Meetings
11:30 a.m. . . . Past Presidents' Luncheon
Noon . . . . . Editorial Board Luncheon Meeting
12:30 p.m. . . . Spouse Luncheon with Capt. Donald Williams, NASA astronaut
3 p.m. . . . . Small County Delegates Meeting
6:30 p.m. . . . President's Reception
7:30 p.m. . . . President's Dinner
9 p.m. . . . . President's Dance (Bo Thorpe & Generation II)

SUNDAY, November 2

8 a.m. . . . . Board of Trustees Breakfast Meeting
9:30 a.m. . . . Final Session, House of Delegates
2 p.m. . . . . Board of Trustees Organizational Meeting, Executive Committee Meeting and Buffet



Proceedings to be Published in January 1987

The proceedings of the 137th Annual Meeting of the House of Delegates, Indiana State Medical Association, to be conducted Oct. 30 to Nov. 2, 1986, at the Hyatt Regency Indianapolis, will be published in the January 1987 issue of INDIANA MEDICINE. Included will be convention photographs, results of elections, membership of reference committees, an attendance roster of the House of Delegates, resolutions, various annual reports, the Fifty Year Club Honor Roll, scientific exhibit winners and ISMA Journalism Award winners.

General Scientific Meeting Speakers to Examine Blood Transfusion Therapy

Dr. Leonard I. Boral, Medical Director of the Central Indiana Regional Blood Center, Indianapolis, will serve as moderator of this year's General Scientific Meeting, to be conducted Friday afternoon, Oct. 31.

The theme of the meeting will be "Blood Transfusion Therapy." Seven speakers will address the issue. They are:

Dr. William L. McNiece, "Transfusion Trigger"; Dr. Craig R. Nichols, "Platelets"; Dr. Terry R. Trammell, "Autologous and Directed Donations"; Dr. Victor H. Muller, "Packed Red Blood Cells and Whole Blood"; Dr. William Sobat, "Fresh Frozen Plasma"; Dr. Arthur Jay, "Hepatitis"; and Dr. Margaret E. Waid, "AIDS".

The second portion of the meeting will feature Dr. Jahangir Cyrus of the University of Louisville School of Medicine. Dr. Cyrus, whose clinical and research interests are in metabolic bone disease and diabetes mellitus, will discuss "Postmenopausal Osteoporosis and Its Treatment Options."

Dr. Glenn Jay Bingle of Indianapolis is chairman of the 1986 general scientific meeting.

Two Political Opponents to Speak at IMPAC Luncheon

"Campaign Viewpoints" will be the topic at the IMPAC luncheon Friday, October 31, as two of Indiana's most hotly contested state candidates share their thoughts on the post they are seeking. Rob Bowen and Evan Bayh will discuss and answer questions from the audience concerning the duties and issues of the Secretary of State's office.

A former Marshall County judge, Bowen is also the son of Health and Human Services Secretary, Dr. Otis R. Bowen. A native of Bremen, Bowen earned his bachelor's degree in business economics from Indiana University and received his law degree from Valparaiso School of Law. He has also served as an intern in the Washington, D.C. office of Senator Richard Lugar, and as a clerk in the Indiana Supreme Court under Justice Alfred Pivarnik.

Like his opponent, Evan Bayh is no newcomer to the political realm. The son of former U.S. Senator Birch Bayh, Evan has made numerous personal appearances on behalf of his father and has worked hard in several campaigns within the Democratic party.

Bayh presently practices law with former Governor Matthew Welsh's law firm of Bingham, Summers, Welsh & Spilman in Indianapolis. A graduate of Indiana University, Bloomington, Bayh received a Bachelor of Science Degree with Honors in Business Economics. After receiving his law degree, Bayh served as clerk to Judge James E. Noland, Chief Judge for the United States District Court for the Southern District of Indiana.

President's Night
Saturday, November 1
6:30 p.m.—Reception
7:30 p.m.—Dinner
9:00 p.m.—Dance (Bo Thorpe & Generation II)

Menu: Shrimp Cocktail
Hunters Salad
New York Sirloin Tyrolienne
Baked Potato / Sour Cream
Linzer Torte

About the Hotel

The Hyatt Regency Indianapolis is a 500-room luxury hotel located downtown in the Merchant's Plaza at the corner of Washington and Capitol Streets. It is across the street from the State Capitol and the Indianapolis Convention Center/Hoosier Dome.

The hotel has a total of 17 meeting rooms. The Regency Ballroom combined with Celebration Hall can accommodate 900 people for a meal function or 1,200 for a meeting.

The Hyatt shares the 20-story atrium lobby with Merchant's Plaza, seven restaurants, a variety of shops and a full service bank. It is close to the restored Indiana Repertory Theatre, the 18,000-seat Market Square Arena, the Indiana Sports Center and the recently renovated, historic Union Station complex, which features more than a hundred shops and restaurants.

The Sports Center, which annually hosts the U.S. Open Clay Court Championships, provides year-round tennis courts. The world-class Natatorium, also near the hotel, offers swimming and health facilities.

The Hyatt is well known for its revolving rooftop restaurant and lounge, the Eagle's Nest, where you can enjoy lunch or dinner while viewing the Indianapolis skyline.

The Porch is a coffee shop overlooking the atrium lobby which offers breakfast, lunch, dinner or late night snacks. It offers Brunch on Sundays. The Porch, located on the third level, opens daily at 6:30 a.m.

The Park is an open-air rocking chair lounge located opposite The Porch, overlooking the atrium. Live music is performed nightly from the bandstand.

The Flamingos Lounge, on the third level, features your favorite libations, happy hour and excellent hot hors d'oeuvres. Music provides the perfect atmosphere for talking, relaxing and unwinding.

Resolutions at a Glance

Delegates to this year's ISMA annual convention will once again consider a variety of resolutions, ranging from establishing a tobacco-free society to assuring the continuance of quality medical care for all.

Base on last year's House of Delegates mandate to support the AMA's efforts to create a smoke-free society by the year 2000, the 1986 House will consider resolutions that call for ISMA to support the activities of the Coalition for a Tobacco-Free Society and to encourage component county medial societies to form local chapters of the Coalition. The Coalition, consisting of interested health-related groups and individuals, seeks to promote public awareness of the hazards of tobacco use through the news media, legislative efforts, and school visits with third and fourth grade students.

In an effort to assure the delivery of quality medical care, a resolution from the Delaware/Blackford County Medical Society calls for Indiana physicians to condemn any system of medical delivery that financially rewards a physician for putting more emphasis on cost containment than on the delivery of quality medical care.

Among other resolutions to be considered are those that:

- Would have the House of Delegates determine whether or not ISMA should take advantage of any future offers from the Indiana Peer Review Organization to purchase stock in the for-profit corporation.
- Would have the House of Delegates approve and adopt the current draft of a medical-legal code of conduct of the Indiana State Bar Association and the ISMA. The present draft of the compact has been reviewed and approved by the ISMA Medico-Legal Committee, the Executive Committee and the Board of Trustees.
- Would require ISMA to develop a model program of introduction to the field of utilitization review and quality assurance activities for use by medical schools.
- Would require the ISMA to evaluate the AMA's proposal for establishing a Young Physician Assembly; the AMA wants state medical associations to form YPA counterpart bodies in order to increase the involvement of young physicians at all levels of organized medicine by responding to their needs.
- Would require the ISMA to provide the leadership and support necessary to form local Physician Family Support Groups that would provide assistance and emotional support for physicians (and their families) going through professional liability suits.

Guest Speakers

Various ISMA medical section meetings are planned for Saturday, Nov. 1.

AIDME (Association of Indiana Directors of Medical Education): Captain Donald E. Williams, U.S. Navy, a NASA astronaut, will discuss "Travels into the New Frontiers."

Neurology: Dr. James C. Stevens, a third year resident, will address "Magnetic Resonance Imaging: Clinical Correlation in 64 Patients with Multiple Sclerosis."

AAPS (Association of American Physicians and Surgeons): Eric I. Miller, J.D., an Indianapolis attorney, will discuss "The Medical Malpractice Environment."

Radiology: Three guest speakers are scheduled to present topics: Dr. Robert W. Burt, "New Brain Imaging Techniques"; Dr. Robert W. Holden, "Socioeconomic Aspects of Breast Imaging"; and Robert Witt, Ph.D., "Bone Mineral Measurements for Osteoporosis."

Internal Medicine: J. Paige Clousson, a Chicago attorney, will moderate a panel discussion on Alternative Health Care Delivery Systems; he will be joined on the panel by Dr. H. Charles Smith, Dr. H. Marshall Trusler and Mr. Ronald Musilli, CEO of Physicians Health Plan of Northern Indiana, an HMO-IPA in Fort Wayne. Four other physicians have also been invited. They are: Dr. Charles P. Duvall of Washington, D.C., Chairman of the Board, Blue Cross-Blue Shield, National Capitol Area, "Washington Up date"; Dr. Thomas Slama, "Infectious Disease Update"; Dr. L. Craig Miller, "Pulmonary Update"; and Dr. Edward Ross, "Cardiology Update."

Pictures and biographical sketches of this year's guest speakers appear on pages 905-912.

Pediatrics: Six guest speakers have been invited, according to Dr. Virginia Wagner, program moderator. The theme of the meeting will be "Child Abuse: Prevent Tomorrow's Problems Today." The entire program is sponsored by the American Academy of Pediatrics in conjunction with the ISMA Sections on Pediatrics, Emergency Medicine, Family Practice and Orthopedic Surgeons. The speakers will be: Dr. John C. Ellis, "Overview of Child Abuse"; Dr. Roberta Ann Hib bard, "Considering the Possibility of Sexual Abuse"; Dr. Mark R. Stevens, "Orthopedic Aspects of Child Abuse"; Dr. Margaret J. Blythe, "Self-Abuse: Venereal Disease in Adolescents"; Dr. John E. Pless, "Perceptions of Child Abuse"; and Deborah J. Daniels, J.D., "Legal Aspects of Child Abuse for the Physician."

Although other ISMA medical sections will conduct meetings during the convention, their plans were not firm at press time.

Physicians participating in these CME programs may claim one AMA Category 1 credit hour for each hour of attendance. Maximum hours allowable in any given program will be designated in the convention pocket guide. (Information on acceptable prescribed AAFP hours will be available at the annual meeting.)



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1985-1986

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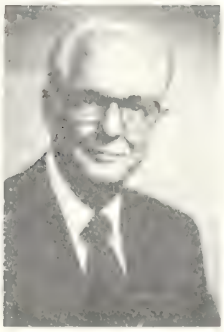
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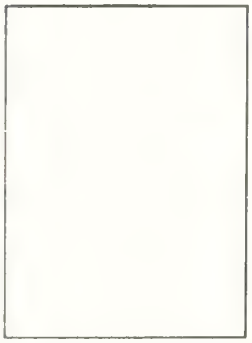
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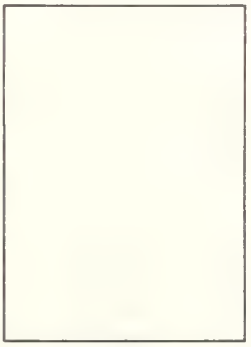
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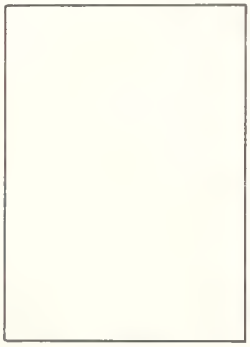
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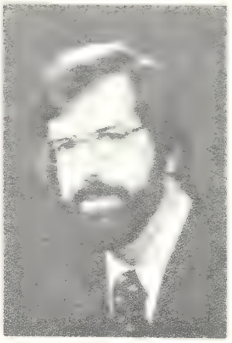
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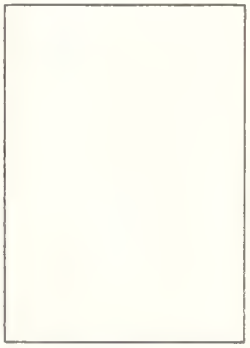
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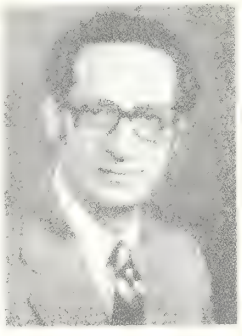
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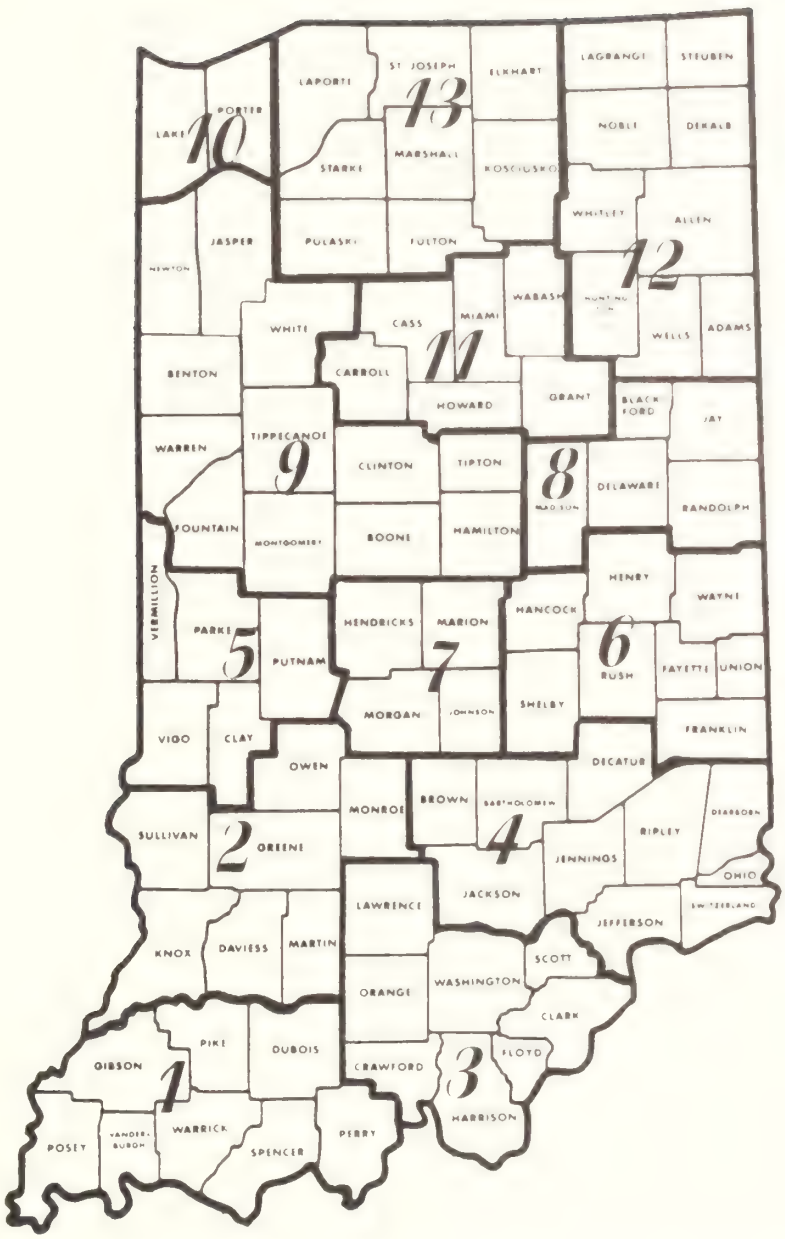
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12—Thomas A. Felger, Fort Wayne (1986)
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Annual Meeting: Sept. 9, 1987, Terre Haute
6—Pres: Douglas Morrell, Rushville
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Annual Meeting: May 13, 1987, Richmond
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11—Pres: Michael Ball, Marion
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13—Pres: Donald W. Smith, South Bend
Secy: Thomas J. Eberts, South Bend
Annual Meeting: Sept. 9, 1987, South Bend

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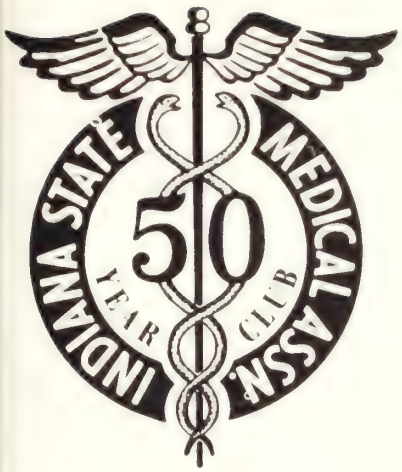
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*Charles E. Gillespie, Seymour	1927	1929
*Angus C. McDonald, Warsaw	1928	1930
*Alois B. Graham, Indianapolis	1929	1931
*Franklin S. Crockett, Lafayette	1930	1932
*Joseph H. Weinstein, Terre Haute	1931	1933
*Everett E. Padgett, Indianapolis	1932	1934
*Walter J. Leach, New Albany	1933	1935
*Roscoe L. Sensenich, South Bend	1934	1936
*Edmund D. Clark, Indianapolis	1935	1937
*Herman M. Baker, Evansville	1936	1938
*Edmund M. Van Buskirk, Ft. Wayne	1937	1939
*Karl R. Ruddell, Indianapolis	1938	1940
*Albert M. Mitchell, Terre Haute	1939	1941
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*Carl H. McCaskey, Indianapolis	1941	1943
*Jacob T. Oliphant, Farmerburg	1942	1944
*Nelson K. Forster, Hammond	1943	1945
*Jesse E. Ferrell, Fortville	1944	1946
*Floyd T. Romberger, Lafayette	1945	1947
*Cleon A. Nafe, Indianapolis	1946	1948
*Augustus P. Hauss, New Albany	1947	1949
*C. S. Black, Warren	1948	1950
*Alfred Ellison, South Bend	1949	1951
*J. William Wright, Indianapolis	1950	1952
*Paul D. Crimm, Evansville	1951	1953
*Wm. Harry Howard, Hammond	1952	1954
*Walter L. Portteus, Franklin	1953	1955
*Walter U. Kennedy, New Castle	1954	1956
*Elton R. Clarke, Kokomo	1955	1957
M. C. Topping, Terre Haute	1956	1958
Kenneth L. Olson, South Bend	1957	1959
*Earl W. Mericle, Indianapolis	1958	1960
*Guy A. Owsley, Hartford City	1959	1961
*Harry R. Stimson, Gary	1960	1962
*Maurice E. Glock, Fort Wayne	1961	1963
Donald E. Wood, Indianapolis	1962	1964
Joseph M. Black, Seymour	1963	1965
*Kenneth O. Neumann, Lafayette	1964	1966
*Eugene S. Rifner, Van Buren	1965	1967
*G. O. Larson, LaPorte	1966	1968
Patrick J. V. Corcoran, Evansville	1967	1969
Lowell H. Steen, Hammond	1968	1970
Malcolm O. Scamahorn, Pittsboro	1969	1971
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*James H. Gosman, Indianapolis	1971	1973
Joe Dukes, Dugger	1972	1974
Gilbert M. Wilhelmus, Evansville	1973	1975
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John W. Beeler, Indianapolis	1975	1977
*Eli Goodman, Charlestown	1976	1978
*James A. Harshman, Kokomo	1977	1978
*Arvine G. Popplewell, Indianapolis	1978	1980
Alvin J. Haley, Carmel	1979	1981
Martin J. O'Neill, Valparaiso	1980	1982
John A. Knote, Lafayette	1981	1983
George T. Lukemeyer, Indianapolis	1982	1984
Lawrence E. Allen, Anderson	1983	1985
Paul Siebenmorgen, Terre Haute	1984	1986

*Deceased



1936-1986

Indiana State Medical Association

Fifty Year Club

Honor Roll

This year several physician members of the Indiana State Medical Association are being recognized for their fifty years of service as loyal and devoted practitioners of medicine. They join the long list of distinguished Hoosier physicians who have been inducted into the Fifty Year Club since its inception in 1948.

The Indiana State Medical Association wishes to formally acknowledge the unselfish service to their patients and profession contributed by the following physicians:

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10 YEARS

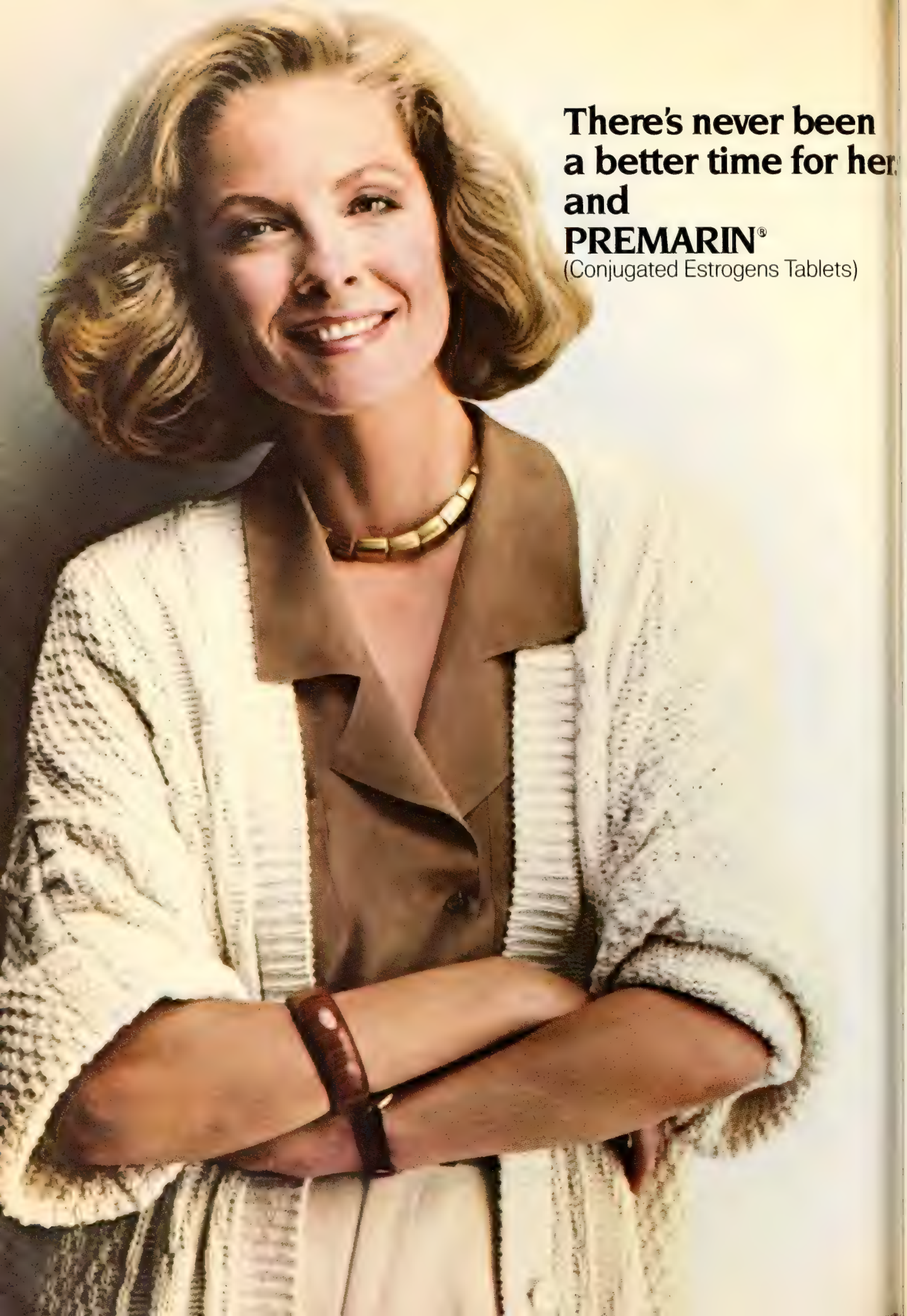
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DYAZIDE®

25 mg Hydrochlorothiazide/**50 mg** Triamterene/SKF

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There's never been
a better time for her
and
PREMARIN®
(Conjugated Estrogens Tablets)

Now the evidence looks better than ever

Significantly reduced risk of endometrial hyperplasia

Endometrial hyperplasia was significantly reduced when progestin was added to PREMARIN therapy for more than ten days a month.[1-4] The risk of endometrial hyperplasia may also be reduced through cyclic administration of unopposed, low-dose PREMARIN.

Effect on lipids—an important feature

PREMARIN used alone does not adversely affect lipid levels. In fact, a clinical study has shown a significant increase in HDL cholesterol—from 49.7 mg/dL to 56.4 mg/dL—and decrease in LDL cholesterol—from 165.1 mg/dL to 138.1 mg/dL—after one year of therapy with PREMARIN, 0.625 mg.[5]

Low-dose control of menopausal symptoms*

PREMARIN effectively relieves vasomotor symptoms, such as hot flashes. When estrogen deficiency is limited to atrophic vaginitis, PREMARIN® (conjugated estrogens) Vaginal Cream restores the vaginal environment to its premenopausal state.

The most widely used, most extensively studied estrogen worldwide.

PREMARIN®
(Conjugated Estrogens Tablets)

Most trusted for more reasons

*PREMARIN is indicated for moderate-to-severe vasomotor symptoms.

Please see following page for brief summary of prescribing information.

For moderate-to-severe vasomotor symptoms

PREMARIN®
(Conjugated Estrogens Tablets)



0.3 mg 0.625 mg 0.9 mg 1.25 mg 2.5 mg

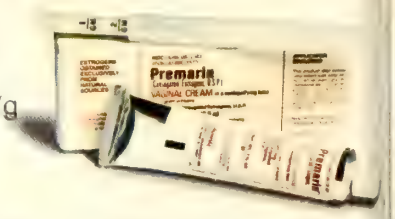
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For atrophic vaginitis

PREMARIN®
(Conjugated Estrogens)

Vaginal Cream

0.625mg/g



BRIEF SUMMARY *(FOR FULL PRESCRIBING INFORMATION AND PATIENT INFORMATION, SEE PACKAGE CIRCULARS)*

PREMARIN® Brand of conjugated estrogens tablets, USP
PREMARIN® Brand of conjugated estrogens Vaginal Cream in a nonliquefying base

1 ESTROGENS HAVE BEEN REPORTED TO INCREASE THE RISK OF ENDOMETRIAL CARCINOMA

Three independent case control studies have reported an increased risk of endometrial cancer in postmenopausal women exposed to exogenous estrogens for more than one year. This risk was independent of the other known risk factors for endometrial cancer These studies are further supported by the finding that incidence rates of endometrial cancer have increased sharply since 1969 in eight different areas of the United States with population-based cancer reporting systems, an increase which may be related to the rapidly expanding use of estrogens during the last decade. The three case control studies reported that the risk of endometrial cancer in estrogen users was about 4 5 to 13 9 times greater than in nonusers. The risk appears to depend on both duration of treatment and on estrogen dose In view of these findings, when estrogens are used for the treatment of menopausal symptoms, the lowest dose that will control symptoms should be utilized and medication should be discontinued as soon as possible When prolonged treatment is medically indicated, the patient should be reassessed on at least a semiannual basis to determine the need for continued therapy Although the evidence must be considered preliminary, one study suggests that cyclic administration of low doses of estrogen may carry less risk than continuous administration; it therefore appears prudent to utilize such a regimen Close clinical surveillance of all women taking estrogens is important In all cases of undiagnosed persistent or recurring abnormal vaginal bleeding, adequate diagnostic measures should be undertaken to rule out malignancy There is no evidence at present that "natural" estrogens are more or less hazardous than "synthetic" estrogens at equiestrogenic doses

2 ESTROGENS SHOULD NOT BE USED DURING PREGNANCY

The use of female sex hormones, both estrogens and progestogens, during early pregnancy may seriously damage the offspring It has been shown that females exposed in utero to diethylstilbestrol, a non-steroidal estrogen, have an increased risk of developing in later life a form of vaginal or cervical cancer that is ordinarily extremely rare This risk has been estimated as not greater than 4 per 1,000 exposures Furthermore, a high percentage of such exposed women (from 30% to 90%) have been found to have vaginal adenosis, epithelial changes of the vagina and cervix Although these changes are histologically benign, it is not known whether they are precursors of malignancy Although similar data are not available with the use of other estrogens, it cannot be presumed they would not induce similar changes Several reports suggest an association between intrauterine exposure to female sex hormones and congenital anomalies, including congenital heart defects and limb reduction defects One case control study estimated a 4 7-fold increased risk of limb reduction defects in infants exposed in utero to sex hormones (oral contraceptives, hormone withdrawal tests for pregnancy, or attempted treatment for threatened abortion) Some of these exposures were very short and involved only a few days of treatment The data suggest that the risk of limb reduction defects in exposed fetuses is somewhat less than 1 per 1,000 In the past, female sex hormones have been used during pregnancy in an attempt to treat threatened or habitual abortion There is considerable evidence that estrogens are ineffective for these indications, and there is no evidence from well controlled studies that progestogens are effective for these uses If PREMARIN is used during pregnancy, or if the patient becomes pregnant while taking this drug, she should be apprised of the potential risks to the fetus, and the advisability of pregnancy continuation.

DESCRIPTION: PREMARIN (conjugated estrogens, USP) contains a mixture of estrogens, obtained exclusively from natural sources, blended to represent the average composition of material derived from pregnant mares' urine It contains estrone, equilin, and 17α-dihydroequilin, together with smaller amounts of 17α-estradiol, equilenin, and 17α-dihydroequilenin as salts of their sulfate esters Tablets are available in 0 3 mg, 0 625 mg, 0 9 mg, 1 25 mg, and 2 5 mg strengths of conjugated estrogens Cream is available as 0 625 mg conjugated estrogens per gram

INDICATIONS AND USAGE: PREMARIN (conjugated estrogens tablets, USP) Moderate-to-severe *vasomotor* symptoms associated with the menopause (There is no evidence that estrogens are effective for nervous symptoms or depression without associated vasomotor symptoms and they should not be used to treat such conditions) **Osteoporosis (abnormally low bone mass).** Atrophic vaginitis Kraurosis vulvae. Female castration

PREMARIN (conjugated estrogens) Vaginal Cream is indicated in the treatment of atrophic vaginitis and kraurosis vulvae PREMARIN HAS NOT BEEN SHOWN TO BE EFFECTIVE FOR ANY PURPOSE DURING PREGNANCY AND ITS USE MAY CAUSE SEVERE HARM TO THE FETUS (SEE BOXED WARNING)

Concomitant Progestin Use: The lowest effective dose appropriate for the specific indication should be utilized Studies of the addition of a progestin for 7 or more days of a cycle of estrogen administration have reported a lowered incidence of endometrial hyperplasia Morphological and biochemical studies of the endometrium suggest that 10 to 13 days of progestin are needed to provide maximal maturation of the endometrium and to eliminate any hyperplastic changes Whether this will provide protection from endometrial carcinoma has not been clearly established There are possible additional risks which may be associated with the inclusion of progestin in estrogen replacement regimens (See PRECAUTIONS) The choice of progestin and dosage may be important; product labeling should be reviewed to minimize possible adverse effects

CONTRAINDICATIONS: Estrogens should not be used in women (or men) with any of the following conditions 1 Known or suspected cancer of the breast except in appropriately selected patients being treated for metastatic disease 2 Known or suspected estrogen-dependent neoplasia 3 Known or suspected pregnancy (See Boxed Warning). 4 Undiagnosed abnormal genital bleeding 5 Active thrombophlebitis or thromboembolic disorders 6 A past history of thrombophlebitis, thrombosis, or thromboembolic disorders associated with previous estrogen use (except when used in treatment of breast or prostatic malignancy)

WARNINGS: Long-term continuous administration of natural and synthetic estrogens in certain animal species increases the frequency of carcinomas of the breast, cervix, vagina, and liver There are now reports that estrogens increase the risk of carcinoma of the endometrium in humans (See Boxed Warning) At the present time there is no satisfactory evidence that estrogens given to postmenopausal women increase the risk of cancer of the breast, although a recent study has raised this possibility There is a need for caution in prescribing estrogens for women with a strong family history of breast cancer or who have breast nodules, fibrocystic disease, or abnormal mammograms. A recent study has reported a 2- to 3-fold increase in the risk of surgically confirmed gallbladder disease in women receiving postmenopausal estrogens

Adverse effects of oral contraceptives may be expected at the larger doses of estrogen used to treat prostatic or breast cancer or postpartum breast engorgement; it has been shown that there is an increased risk of thrombosis in men receiving estrogens for prostatic cancer and women for postpartum breast engorgement Users of oral contraceptives have an increased risk of diseases, such as thrombophlebitis, pulmonary embolism, stroke, and myocardial infarction. Cases of retinal thrombosis, mesenteric thrombosis, and optic neuritis have been reported in oral contraceptive users. An increased risk of postsurgery thromboembolic complications has also been reported in users of oral contraceptives If feasible, estrogen should be discontinued at least 4 weeks before surgery of the type associated with an increased risk of thromboembolism, or during periods of prolonged immobilization Estrogens should not be used in persons with active thrombophlebitis, thromboembolic disorders, or in persons with a history of such disorders in association with estrogen use They should be used with caution in patients with cerebral vascular or coronary artery disease. Large doses (5 mg conjugated estro per day), comparable to those used to treat cancer of the prostate and breast, have been shown to increas risk of nonfatal myocardial infarction, pulmonary embolism and thrombophlebitis When doses of this siz used, any of the thromboembolic and thrombotic adverse effects should be considered a clear risk

Benign hepatic adenomas should be considered in estrogen users having abdominal pain and tenden abdominal mass, or hypovolemic shock Hepatocellular carcinoma has been reported in women taking estro containing oral contraceptives Increased blood pressure may occur with use of estrogens in the menopaus blood pressure should be monitored with estrogen use. A worsening of glucose tolerance has been obser patients on estrogen-containing oral contraceptives. For this reason, diabetic patients should be car observed Estrogens may lead to severe hypercalcemia in patients with breast cancer and bone metastas

PRECAUTIONS: Physical examination and a complete medical and family history should be taken prior t initiation of any estrogen therapy with special reference to blood pressure, breasts, abdomen, and pelvic or and should include a Papanicolaou smear. As a general rule, estrogen should not be prescribed for longe one year without another physical examination being performed Conditions influenced by fluid retention su asthma, epilepsy, migraine, and cardiac or renal dysfunction, require careful observation Certain patients develop manifestations of excessive estrogenic stimulation, such as abnormal or excessive uterine blee mastodynia, etc Prolonged administration of unopposed estrogen therapy has been reported to increase th of endometrial hyperplasia in some patients. Oral contraceptives appear to be associated with an incr incidence of mental depression Patients with a history of depression should be carefully observed. Preex uterine leiomyomata may increase in size during estrogen use The pathologist should be advised of est therapy when relevant specimens are submitted If jaundice develops in any patient receiving estroge medication should be discontinued while the cause is investigated. Estrogens should be used with care in pa with impaired liver function, renal insufficiency, metabolic bone diseases associated with hypercalcemia, young patients in whom bone growth is not complete If concomitant progestin therapy is used, potential may include adverse effects on carbohydrate and lipid metabolism

The following changes may be expected with larger doses of estrogen:

a. Increased sulfobromophthalein retention

b. Increased prothrombin and factors VII, VIII, IX, and X; decreased antithrombin 3; increased epinephrine-induced platelet aggregability

c. Increased thyroid binding globulin (TBG) leading to increased circulating total thyroid hormon measured by PBI, T4 by column, or T4 by radioimmunoassay. Free T3 resin uptake is decreased, reflectin elevated TBG, free T4 concentration is unaltered

d Impaired glucose tolerance

e Decreased pregnanediol excretion

f. Reduced response to metyrapone test.

g Reduced serum folate concentration

h Increased serum triglyceride and phospholipid concentration As a general principle, the administrab any drug to nursing mothers should be done only when clearly necessary since many drugs are excreted in h milk

ADVERSE REACTIONS: The following have been reported with estrogenic therapy, including oral contracep breakthrough bleeding; spotting; change in menstrual flow; dysmenorrhea; premenstrual-like syndr amenorrhea during and after treatment; increase in size of uterine fibromyomata, vaginal candidiasis, char cervical erosion and in degree of cervical secretion; cystitis-like syndrome; tenderness, enlargement, secr (of breasts); nausea, vomiting, abdominal cramps, bloating; cholestatic jaundice; chloasma or melasma may persist when drug is discontinued; erythema multiforme; erythema nodosum; hemorrhagic eruption; l scalp hair; hirsutism; steepening of corneal curvature; intolerance to contact lenses; headache, migr dizziness, mental depression, chorea; increase or decrease in weight; reduced carbohydrate tolerance; aggr tion of porphyria; edema; changes in libido

ACUTE OVERDOSAGE: May cause nausea, and withdrawal bleeding may occur in females

DOSAGE AND ADMINISTRATION:

PREMARIN® Brand of conjugated estrogens tablets, USP

1 *Given cyclically for short-term use only.* For treatment of moderate to severe *vasomotor* symptoms, atr vaginitis, or kraurosis vulvae associated with the menopause (0 3 to 1 25 mg or more daily). The lowest dos will control symptoms should be chosen and medication should be discontinued as promptly as pos Administration should be cyclic (eg, three weeks on and one week off) Attempts to discontinue or medication should be made at three- to six-month intervals

2. *Given cyclically:* Female castration. Osteoporosis. Female castration—1.25 mg daily, cyclically. A upward or downward according to response of the patient For maintenance, adjust dosage to lowest leve will provide effective control Osteoporosis —0.625 mg daily Administration should be cyclic (eg, three w on and one week off)

Patients with an intact uterus should be monitored for signs of endometrial cancer and appropriate mea taken to rule out malignancy in the event of persistent or recurring abnormal vaginal bleeding.

PREMARIN® Brand of conjugated estrogens Vaginal Cream

Given cyclically for short-term use only. For treatment of atrophic vaginitis or kraurosis vulvae

The lowest dose that will control symptoms should be chosen and medication should be discontinu promptly as possible

Administration should be cyclic (eg, three weeks on and one week off)

Attempts to discontinue or taper medication should be made at three-to-six month intervals

Usual dosage range: 2 to 4 g daily, intravaginally, depending on the severity of the condition

Treated patients with an intact uterus should be monitored closely for signs of endometrial cance appropriate diagnostic measures should be taken to rule out malignancy in the event of persistent or rec abnormal vaginal bleeding

References:

1. Whitehead MI, Townsend PT, Pryse-Davies J, et al: Effects of estrogens and progestins on the biochemistr morphology of the postmenopausal endometrium. *N Engl J Med* 1981;305:1599-1605 **2.** Paterson MEL, V Evans T, Sturdee DW, et al: Endometrial disease after treatment with oestrogens and progestogens i climacteric. *Br Med J* 1980;280:822-824. **3.** Magos AL, Brincat M, Studd JWW, et al: Amenorrhea endometrial atrophy with continuous oral estrogen and progestogen therapy in postmenopausal women. *Gynecol* 1985;67:496-499. **4.** Whitehead MI, Lane G, Siddle N, et al: Avoidance of endometrial hyperstimu in estrogen-treated postmenopausal women. *Semin Reprod Endocrinol* 1983;1:1;41-52. **5.** Barnes RB, R Lobo RA: Comparison of lipid and androgen levels after conjugated estrogen or depo-medroxyprogest acetate treatment in postmenopausal women. *Obstet Gynecol* 1985;66:216-219

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Guest Speakers—1986 Convention



JOHN J. COURY JR., M.D.
President-elect
American Medical Association
General and pediatric surgeon from Port Huron, Michigan; Past President, Michigan State Medical Society; certified, American Board of Surgery; Fellow, American College of Surgeons; M.D. degree from Case Western University School of Medicine.



CAPT. DONALD E. WILLIAMS, USN
NASA Astronaut, Houston
A.I.D.M.E.
Native of Lafayette, Ind.; graduate of Purdue University; Vietnam War veteran; pilot of the fourth flight of Discovery and the 16th Shuttle mission, 1985.



EVAN BAYH
Indianapolis
IMPAC
Democratic candidate for nomination as Indiana Secretary of State; practices law in Indianapolis; J.D. degree from Indiana University.



ROB BOWEN
Bremen, Ind.
IMPAC
Republican candidate for nomination as Indiana Secretary of State; former Marshall County judge; J.D. degree from Valparaiso School of Law.

CARLOS A. DUJOVNE, M.D.
Kansas City, Kansas
Prev. Med. & Public Health
Professor of Medicine and Clinical Pharmacology, and Director, Lipid and Arteriosclerosis Prevention Clinic, The University of Kansas Medical Center; member, American Society for Clinical Pharmacology and Therapeutics; Clinical Pharmacology Fellowship, Johns Hopkins, 1968-70; author and lecturer; M.D. degree from Buenos Aires University, Argentina.



JAMES C. STEVENS, M.D.
Indianapolis
Neurology
Presently in third year of neurologic residency at I.U. School of Medicine; 1986 winner of the Alexander T. Ross Award, given to the author of the outstanding resident neurologic research paper ("Magnetic Resonance Imaging: Clinical Correlation in 64 Patients with Multiple Sclerosis"); M.D. degree from Indiana University.



LEONARD I. BORAL, M.D.
Indianapolis
General Scientific (Moderator)
Medical Director, Central Indiana Regional Blood Center, Indianapolis; member, American Society of Clinical Pathologists, College of American Pathologists, American Association of Blood Banks; M.D. degree from University of Pennsylvania.



WILLIAM S. SOBAT, M.D.
Indianapolis
General Scientific
Clinical Professor of Surgery, I.U. School of Medicine; Director of General Surgery Residency Program, Methodist Hospital, Indianapolis; Director, Indiana Vascular Lab; Fellow, American College of Surgeons; M.D. degree from Indiana University.



Guest Speakers



WILLIAM L. McNIECE, M.D.
Indianapolis
General Scientific
Assistant Professor of Anesthesiology and Pediatric Anesthesiology, I.U. School of Medicine; certified, American Board of Anesthesiology; member, American Society of Anesthesiologists and American Academy of Pediatrics; M.D. degree from Indiana University.



CRAIG R. NICHOLS, M.D.
Indianapolis
General Scientific
Assistant Professor, Dept. of Medicine, I.U. School of Medicine; Hematology/Oncology Fellowship, Indiana University, 1983-85; certified, American Board of Internal Medicine; member, American Society of Clinical Oncology and American College of Physicians; M.D. degree from Oregon Health Sciences Center.



TERRY R. TRAMMELL, M.D.
Indianapolis
General Scientific
Assistant Clinical Professor, Dept. of Orthopedics, I.U. School of Medicine; private practice in orthopedics with subspecialty interest in diseases and deformity of the spine; member, Methodist Hospital Trauma Center CORE group; M.D. degree from Indiana University.



VICTOR H. MULLER, M.D.
Indianapolis
General Scientific
Associate Pathologist, St. Vincent Hospital, Indianapolis; chairman, Indiana State Board of Health Committee on Hemophilia; member, American Society of Clinical Pathologists; certified, American Board of Pathology (Anatomic) and Immunohematology and Blood Banking; M.D. degree from Indiana University.



MARGARET E. WAID, M.D.
Indianapolis
General Scientific
President-elect, Indiana State Association of Blood Banks; Associate Medical Director, Central Indiana Regional Blood Center; member, APIC AIDS Task Force; member, State Board of Health AIDS Advisory Committee; M.D. degree from University of Michigan.



JAHANGIR CYRUS, M.D.
Louisville
General Scientific
Associate Professor of Medicine and Director, Training Program, Division of Endocrinology and Metabolism, University of Louisville School of Medicine; certified, American Board of Internal Medicine with subspecialty in Endocrinology and Metabolism; clinical and research interests are in metabolic bone disease and diabetes mellitus; M.D. degree from Tehran University.



THOMAS SLAMA, M.D.
Indianapolis
Internal Medicine
Clinical Associate Professor of Medicine, I.U. School of Medicine; Chief, Division of Infectious Disease, St. Vincent Hospital, and Infectious Diseases Consultant, Methodist Hospital; certified, American Board of Internal Medicine, with subspecialty in Infectious Diseases; M.D. degree from Indiana University.

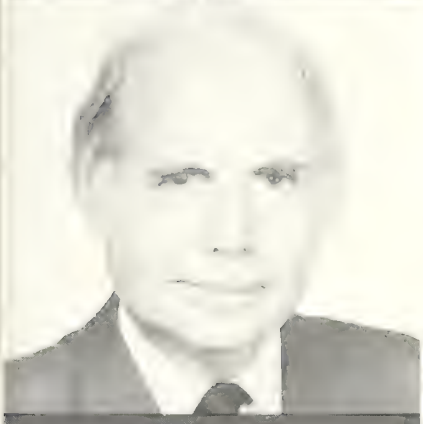


L. CRAIG MILLER, M.D.
Danville, Ind.
Internal Medicine
Clinical Assistant Professor of Medicine, I.U. School of Medicine; Medical Director of Respiratory Therapy and Cardiology, Hendricks County Hospital, Danville; certified, American Board of Internal Medicine and by the Pulmonary Subspecialty Board; M.D. degree from Indiana University. (Presentation sponsored by National Medical Homecare).

Guest Speakers



EDWARD ROSS, M.D.
Indianapolis
Internal Medicine
President, Indiana Society of Internal Medicine; President, Hoosier State Medical Association; Board of Directors, American College of Angiology; Editor, *Angiology, The Journal of Vascular Disease*; certified, American Board of Internal Medicine; M.D. degree from Indiana University.



J. PAIGE CLOUSSON, J.D.
Chicago
Internal Medicine
President, Physician Support Services, Inc., Chicago; President of his own law firm; former director of the AMA's Dept. of Negotiations; J.D. degree from W. Virginia University, with Master's in Labor Law from Georgetown University.



H. CHARLES SMITH, M.D.
Bluffton, Ind.
Internal Medicine
Medical Director, Caylor-Nickel Hospital, Bluffton, and Medical Director, Maxicare Indiana, an HMO; Indiana Peer Review Organization physician advisor; certified, American Board of Pediatrics; M.D. degree from University of Iowa.



H. MARSHALL TRUSLER, M.D.
Indianapolis
Internal Medicine
Private practice, plastic surgery; Medical Director of Health Maintenance of Indiana, Inc./Key Health Plan; Board of Directors, Marion County Medical Society; Fellow, American College of Surgeons; member, American Society for Plastic and Reconstructive Surgery; M.D. degree from Harvard Medical School.

Guest Speakers

CHARLES P. DUVALL, M.D.
Washington, D.C.
Internal Medicine
Clinical Associate Professor of Medicine, Georgetown University Hospital; Chairman of the Board, Blue Cross-Blue Shield, National Capital Area; member, American Society of Internal Medicine; certified, American Board of Internal Medicine and American Board of Clinical Oncology; M.D. degree from University of Rochester.



VIRGINIA M. WAGNER, M.D.
Indianapolis
Pediatrics (Moderator)
Clinical Professor of Pediatrics, I.U. School of Medicine; Chairman, Pediatric Medical Education Committee, Methodist Hospital, Indianapolis; member, American Academy of Pediatrics; M.D. degree from Indiana University.



JOHN E. PLESS, M.D.
Indianapolis
Pediatrics
Professor of Pathology, I.U. School of Medicine; Chairman, State Commission on Forensic Science; Director, Forensic Pathology Division, Department of Pathology, I.U. Medical Center; supervises post mortem examinations for coroners; certified in Anatomic and Clinical Pathology and in Forensic Pathology; M.D. degree from Indiana University.



JOHN C. ELLIS, M.D.
Indianapolis
Pediatrics
Director, Pediatric Ambulatory Service, Methodist Hospital, Indianapolis; Director, Muscular Dystrophy Association Clinic of Central Indiana; Medical Director, Cerebral Palsy Treatment Center, Methodist Hospital; Fellow, American Academy of Pediatrics; M.D. degree from Peoria (Ill.) School of Medicine.



Guest Speakers



DEBORAH J. DANIELS, J.D.
Indianapolis
Pediatrics
Chief Counsel, Marion County Prosecutor's Office; supervises efforts of Marion County Prosecutor's Office in victim assistance, domestic abuse, adult abuse, child abuse and sexual abuse; J.D. degree cum laude from Indiana University.



ROBERTA ANN HIBBARD, M.D.
Indianapolis
Pediatrics
Assistant Professor, Department of Pediatrics, I.U. School of Medicine; Robert Wood Johnson Fellow, General Pediatrics Academic Development Program, University of Rochester School of Medicine and Dentistry, 1983-85; member, American Academy of Pediatrics; M.D. degree from Case Western Reserve University, Cleveland.



MARK R. STEVENS, M.D.
Indianapolis
Pediatrics
Associated with Orthopaedics Indianapolis, Inc.; M.D. degree from Ohio State.



MARGARET J. BLYTHE, M.D.
Indianapolis
Pediatrics
Private practice, adolescent medicine; Fellow, American Academy of Pediatrics; formerly Clinical Instructor of Pediatrics, Wishard Memorial Hospital; M.D. degree from Indiana University.

Guest Speakers

ROBERT W. HOLDEN, M.D.
Plainfield, Ind.
Radiology
Chairman, ISMA Hospital Medical Staff Section; Medical Staff, Department of Radiology, University Hospital; certified, American Board of Radiology; M.D. degree from Indiana University.



ROBERT W. BURT, M.D.
Indianapolis
Radiology
Medical Staff, Nuclear Medicine Section, University Hospital, V.A. Medical Center; certified, American Board of Nuclear Medicine; member, Society of Nuclear Medicine and American Institute of Ultrasound in Medicine; M.D. degree from Northwestern University.



ROBERT M. WITT, Ph.D.
Indianapolis
Radiology
Physicist, Veterans Administration, Indianapolis; Assistant Professor of Radiology, I.U. School of Medicine; primary interest is in quantitative measurements in diagnostic radiology and picture archiving and communication systems (PACS); Ph.D. degree from University of Wisconsin.



ERIC I. MILLER, J.D.
Indianapolis
A.A.P.S.
Attorney at law; founder and Executive Director of Citizens Concerned for the Constitution; assisted in drafting and passage of Indiana Drunk Driving Statute.



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CONTRAINDICATIONS

CARDIZEM is contraindicated in (1) patients with sick sinus syndrome except in the presence of a functioning ventricular pacemaker, (2) patients with second- or third-degree AV block except in the presence of a functioning ventricular pacemaker, and (3) patients with hypotension (less than 90 mm Hg systolic).

WARNINGS

1. ***Cardiac Conduction.*** *CARDIZEM prolongs AV node refractory periods without significantly prolonging sinus node recovery time, except in patients with sick sinus syndrome. This effect may rarely result in abnormally slow heart rates (particularly in patients with sick sinus syndrome) or second- or third-degree AV block (six of 1,243 patients for 0.48%). Concomitant use of diltiazem with beta-blockers or digitalis may result in additive effects on cardiac conduction. A patient with Prinzmetal's angina developed periods of asystole (2 to 5 seconds) after a single dose of 60 mg of diltiazem.*
2. ***Congestive Heart Failure.*** *Although diltiazem has a negative inotropic effect in isolated animal tissue preparations, hemodynamic studies in humans with normal ventricular function have not shown a reduction in cardiac index nor consistent negative effects on contractility (dp/dt).*
   Experience with the use of CARDIZEM alone or in combination with beta-blockers in patients with impaired ventricular function is very limited. Caution should be exercised when using the drug in such patients.
3. ***Hypotension.*** *Decreases in blood pressure associated with CARDIZEM therapy may occasionally result in symptomatic hypotension.*
4. ***Acute Hepatic Injury.*** *In rare instances, significant elevations in enzymes such as alkaline phosphatase, CPK, LDH, SGOT, SGPT, and other symptoms consistent with acute hepatic injury have been noted. These reactions have been reversible upon discontinuation of drug therapy. The relationship to CARDIZEM is uncertain in most cases, but probable in some. (See PRECAUTIONS.)*

PRECAUTIONS

General. *CARDIZEM (diltiazem hydrochloride) is extensively metabolized by the liver and excreted by the kidneys and in bile. As with any new drug given over prolonged periods, laboratory parameters should be monitored at regular intervals. The drug should be used with caution in patients with impaired renal or hepatic function. In subacute and chronic dog and rat studies designed to produce toxicity, high doses of diltiazem were associated with hepatic damage. In special subacute hepatic studies, oral doses of 125 mg/kg and higher in rats were associated with histological changes in the liver which were reversible when the drug was discontinued. In dogs, doses of 20 mg/kg were also associated with hepatic changes, however, these changes were reversible with continued dosing.*

Drug Interaction. *Pharmacologic studies indicate that there may be additive effects in prolonging AV conduction when using beta-blockers or digitalis concomitantly with CARDIZEM. (See WARNINGS.)*

Controlled and uncontrolled domestic studies suggest that concomitant use of CARDIZEM and beta-blockers or digitalis is usually well tolerated. Available data are not sufficient, however, to predict the effects of concomitant treatment, particularly in patients with left ventricular dysfunction or cardiac conduction abnormalities. In healthy volunteers, diltiazem has been shown to increase serum digoxin levels up to 20%.

Carcinogenesis, Mutagenesis, Impairment of Fertility. *A 24-month study in rats and a 21-month study in mice showed no evidence of carcinogenicity. There was also no mutagenic response in in vitro bacterial tests. No intrinsic effect on fertility was observed in rats.*

Pregnancy. *Category C. Reproduction studies have been conducted in mice, rats, and rabbits. Administration of doses ranging from five to ten times greater (on a mg/kg basis) than the daily recommended therapeutic dose has resulted in embryo and fetal lethality. These doses, in some studies, have been reported to cause skeletal abnormalities. In the perinatal/postnatal studies, there was some reduction in early individual pup weights and survival rates. There was an increased incidence of stillbirths at doses of 20 times the human dose or greater.*

There are no well-controlled studies in pregnant women; therefore, use CARDIZEM in pregnant women only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers. *Diltiazem is excreted in human milk. One report suggests that concentrations in breast milk may approximate serum levels. If use of CARDIZEM is deemed essential, an alternative method of infant feeding should be instituted.*

Pediatric Use. *Safety and effectiveness in children have not been established.*

ADVERSE REACTIONS

Serious adverse reactions have been rare in studies carried out to date, but it should be recognized that patients with impaired ventricular function and cardiac conduction abnormalities have usually been excluded.

In domestic placebo-controlled trials, the incidence of adverse reactions reported during CARDIZEM therapy was not greater than that reported during placebo therapy.

The following represent occurrences observed in clinical studies which can be at least reasonably associated with the pharmacology of calcium influx inhibition. In many cases, the relationship to CARDIZEM has not been established. The most common occurrences as well as their frequency of presentation are: edema (2.4%), headache (2.1%), nausea (1.9%), dizziness (1.5%), rash (1.3%), asthenia (1.2%). In addition, the following events were reported infrequently (less than 1%).

Cardiovascular:	*Angina, arrhythmia, AV block (first degree), AV block (second or third degree — see conduction warning), bradycardia, congestive heart failure, flushing, hypotension, palpitations, syncope*
Nervous System:	*Amnesia, gait abnormality, hallucinations, insomnia, nervousness, paresthesia, personality change, somnolence, tinnitus, tremor*
Gastrointestinal:	*Anorexia, constipation, diarrhea, dysgeusia, dyspepsia, mild elevations of alkaline phosphatase, SGOT, SGPT, and LDH (see hepatic warnings), vomiting, weight increase*
Dermatologic:	*Petechiae, pruritus, photosensitivity, urticaria*
Other:	*Amblyopia, dyspnea, epistaxis, eye irritation, hyperglycemia, nasal congestion, nocturia, osteoarticular pain, polyuria, sexual difficulties*

The following postmarketing events have been reported infrequently in patients receiving CARDIZEM: alopecia, gingival hyperplasia, erythema multiforme, and leukopenia. However, a definitive cause and effect between these events and CARDIZEM therapy is yet to be established. ***Issued 7/86***

See complete Professional Use Information before prescribing.

References: ***1.*** *Pepine CJ, Feldman RL, Hill JA, et al: Clinical outcome after treatment of rest angina with calcium blockers: Comparative experience during the initial year of therapy with diltiazem, nifedipine, and verapamil. Am Heart J 1983, 106(6):1341-1347.* ***2.*** *Shapiro W: Calcium channel blockers: Actions on the heart and uses in ischemic heart disease. Consultant 1984,24(Dec):150-159.* ***3.*** *Johnston DL, Lesoway R, Humen DP, et al: Clinical and hemodynamic evaluation of propranolol in combination with verapamil, nifedipine and diltiazem in exertional angina pectoris: A placebo-controlled, double-blind, randomized, crossover study. Am J Cardiol 1985;55:680-687.* ***4.*** *Cohn PF, Braunwald E: Chronic ischemic heart disease, in Braunwald E (ed): Heart Disease: A Textbook of Cardiovascular Medicine, ed 2. Philadelphia, WB Saunders Co, 1984, chap 39.* ***5.*** *Schroeder JS: Calcium and beta blockers in ischemic heart disease: When to use which. Mod Med 1982;50(Sept):94-116.*

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Report of the Chairman, Board of Trustees

Submitted by: John MacDougall, M.D.
Referred to: Ref. Committee 1

Throughout the year you received "Mac's Facts" which reported Board actions. For this annual report, only the main substance of this year's Board decisions will be summarized.

Among guests invited to speak to the Board were: Walter J. Daly, M.D., I.U. School of Medicine; Robert Holden, M.D., Chairman of the newly formed Hospital Medical Staff Section; Donald Chamberlain, M.D., Chairman of the American Physicians Life Board; Fouad Halaby, M.D., President of IPRO; Davis Ellis, M.D., Medical Director for Medicaid; and Woodrow Myers, M.D., Commissioner, Indiana State Board of Health.

The following reports were heard on a regular basis: Indiana Delegation pertaining to AMA matters; the Treasurer's review of the Association's financial status, officers and trustees, the Executive Committee, committees and commissions, the Auxiliary, and resident and student medical societies.

With the help of the Commission on Legislation, the Board was regularly apprised of the more important health/medical legislative issues. As a result of the Commission's recommendation, the ISMA and IAFP will cosponsor the Physician-of-the-Day Program during the 1987 Indiana General Assembly. The Commission on Legislation and the Commission on Public Relations will promote three legislative issues during the next session—a ban on the use of tobacco, drinking and driving, and reinstatement of the motorcycle helmet law. Five bills were filed for consideration in the Indiana General Assembly as a result of directions from the 1985 ISMA House of Delegates: Uniform Determination of Death; Designated Labs for Infant Blood Screens; .05% Blood Alcohol Content; Physicians on Public Hospital Boards, and Mandatory Motorcycle Helmets. The Board supported the Commission's opposition to HB 1338, which would include nurse midwives in the Medical Malpractice Act, and also its opposition to proposed regulations from the Indiana Department of Welfare, which would restrict a patient's freedom of choice in selecting a physician under the Medicaid program.

During the year, several meetings were held by IPRO and representatives from ISMA (Board Committee) to discuss areas of concern and numerous changes in IPRO regulations. The board defeated the Executive Committee's recommendation to purchase stock in IPRO (converted to a for-profit status); but did refer the subject of IPRO stock purchase to the 1986 House of Delegates (Res. 86-5).

Both resident and student component societies reported successful recruitment campaigns which increased membership. Residents participated in INDIANA MEDICINE's essay contest and the Board voted to support practice workshops and to sponsor resident and student attendance at AMA meetings.

The Auxiliary reported concentration this past year on legislation, health projects, membership and AMA/ERF. A check from Indiana for $25,500 was presented to AMA/ERF in December.

The Board, continually watchful of the medical malpractice situation in Indiana, heard an overview of the recent actuarial study of the Patient's Compensation Fund and the actuary's recommendation that the surcharge on insurance premiums be raised from 75 percent to 100 percent. The change was indicated to make up a shortfall in the fund and build up reserves to meet unfunded liability estimates.

Reports from the Physicians Insurance Company of Indiana (PICI) and American Physicians Life Insurance (APL) were reviewed periodically during the year. The growth of both companies is encouraging; they deserve the continued support of ISMA members.

A proposal from an outside organization to develop spokesperson training and to develop and administer a speakers bureau for ISMA was rejected by the Board as being too costly. The Board requested staff to develop a similar proposal which could be completed inhouse for minimal costs.

In April the Board unanimously approved Richard King, ISMA Legal Counsel, as the Executive Director of the Association. Mr. King succeeded Donald Foy who is now Executive Vice President of the Medical Society of the State of New York.

The Board refused an offer to buy the ISMA headquarters but authorized development of renovation plans to meet the needs for office space requirements and expand the parking lot. The Board also approved the Future Planning Committee's recommendation that an environmental analysis and a strategic plan be determined for future direction for ISMA.

The Board approved a resolution from the Marion County Medical Society protesting a Blue Cross/Blue Shield policy that requires all Blues patients to go to Preferred Care hospitals, whether they belong to the Preferred Care program or not. The resolution voices concern that the requirement interferes with the doctor patient relationship.

Other actions included: the presidential appointment of an ongoing ISMA liaison committee with the Welfare Department to review proposed Medicaid regulations and a committee whose goal will be to attempt to resolve some of the problems with nursing home inspections under the new rules and regulations; approved blood transfusions guidelines, proposed by the Joint Blood Bank Task Force, to be published in INDIANA MEDICINE; approved the Hospital Medical Staff Section's budgetary request of not more than $10,000 for fiscal year 1986, with HMSS activities to be evaluated annually; and endorsed additional membership services to be handled through a structured inhouse ISMA department.

Every effort has been made to fulfill the intent of last year's House actions; resolutions were referred to the appropriate ISMA commissions and committees. The Board is appreciative of all groups that offered recommendations so that the Board could be knowledgeable and respond accordingly.

The Board especially thanks the ISMA staff for their competence and professionalism in implementing the policies of the Association.

Report of the Chairman, Executive Committee

Submitted by: Paul Siebenmorgen, M.D., Chairman
Referred to: Ref. Committee 1

This has been an unusually busy year for the Executive Committee. Meeting monthly, the Committee considered a wide variety of issues which required action or were referred to the Board with recommendations for final action. All Executive Committee actions were reviewed by the Board of Trustees.

Top priority has been and is the continuous surveillance of expenditures which is reviewed at every meeting. The Association has been currently operating with a small deficit budget because of present economic conditions with depressed interest earnings.

There was considerable discussion concerning ISMA's housing. Action of the Board vetoed the move to the Keystone-at-the-Crossing area and instead, a professional firm was authorized to do an interior space analysis and renovation of the present Headquarters' offices. A portion of adjacent property was sold with some retention of space which can be used for an additional "park" with parking.

The Executive Committee approved the Search Committee's selection of Richard King as the new ISMA Executive Director, to replace Mr. Donald Foy, and approved the reorganization of staff.

The Committee recommended for Board approval nominees to several health related organizations to insure official ISMA representation.

Guests during the past year included representatives from Prudential explaining the Pru Care Plus Organization, and the President of the Indiana Peer Review Organization (IPRO) who urged ISMA's ownership of IPRO stock. The ISMA Board did not approve the Executive Committee's recommendation to acquire some IPRO stock and voted to present Resolution 86-5 from the Board which gives the 1986 House of Delegates the prerogative of stock purchase in this for-profit corporation if it becomes available in the future at a favorable price.

The Executive Committee urged cooperation with other Indiana health organizations and blood banks in a concerted effort to identify individuals who might have been exposed to the virus that causes acquired immune deficiency syndrome through contaminated blood transfusions.

Reviewed by the Executive Committee were: (1) a proposal from the Commission on Sports Medicine for a faculty athletic trainer program, (2) the "Medical-Legal Compact of Conduct of the Indiana State Bar Association and ISMA" (Re: Resolution 86-6), (3) the 1986 *Indiana Diet Manual*, (4) an updated edition of the ISMA public and administrative Policy Manual, and (5) the establishment of a guide to the publication of official matters in INDIANA MEDICINE.

In addition to the many routine and usual matters, the following are worth mentioning:

- Reviewed medical malpractice data and its effect on the Indiana Patients' Compensation Fund.
- Agreed to cosponsor with the Indiana Hospital Association a series of regional seminars pertaining to the implementation of Indiana's new organ transplant law (HEA 1118), effective September 1, 1986.
- Endorsed a variety of "business services" which are to be offered as a savings to membership.
- Attended the AMA National Leadership Conference in February.
- Agreed to help publicize the 1986 Hoosiers Against Drunk Driving (HADD) Conference through ISMA's public relations and legislative departments and in cooperation with the county medical societies.
- Encouraged ISMA's financial support, to be included in the 1987 budget, for the National Conference of State Legislators' annual meeting in 1987.
- Approved cosponsorship of a reception at the Governor's Mansion to promote awareness of the Indiana Governor's Council for Physical Fitness and Sports Medicine and to open avenues for future interaction among similar groups.
- Endorsed two programs of the Indiana State Board of Health so that grants may be obtained for: (1) health care for the uninsured, and (2) the development of a statewide breastfeeding promotion program.
- Supported Vanderburgh County Medical Society's resolution in opposition to the proposed PCB Removal Plant to be located near Henderson, Kentucky.

No report of the Executive Committee can be complete without a special "thanks" to our efficient ISMA staff for their day-to-day labors on our behalf.

Report of the Editor, Indiana Medicine

Submitted by: Frank B. Ramsey, M.D.
Referred to: Ref. Committee 1

At the end of the third quarter of the fiscal year (June 30), the finances were about $2,000 better than the budget. This was due to a few hundred dollars less expense than expected and $1700 more income than expected.

National advertising produced only 57% of the 3/4 budgeted income, but local advertising produced 86% of the annual expectation during the three quarters. All national advertising is down this year. Newspaper, magazine and TV are all down. In addition, pharmaceutical advertising is slack because of the large number of patents that have expired recently and the small supply of new drugs, which usually account for multiple-page announcements.

Journal income in 1986 was boosted by outside subscriptions at 138% for 3/4, sale of reprints at 130% and CME subsidies by 101%.

CONTINUED ON PAGE 922

Reports of Trustees

All Trustee Reports are referred to Reference Committee 1.

Photos of the ISMA trustees appear on page 890.

First District Trustee

Submitted by: E. D. Gourieux, M.D.

I am pleased to report to you on some of the activities we have participated in as members of the First District Medical Society.

Our ISMA convention was held in South Bend in November 1985. The First District Delegation met several times to interview candidates and to review proposed resolutions.

A number of First District physicians were involved in legislative efforts this year. Legislative dinners were held throughout the state and in Evansville in late summer of 1985. Both First District physicians and area legislators were pleased and left more knowledgeable of each other's concerns.

Once again, the ISMA legislative staff has successfully represented physician views to the legislators. Through their efforts, we now have a uniform determination of death act which incorporates into state law the common law definition of death as well as the brain-dead definition. Additionally, a bill was introduced which would require HTLV-III screening of all patients admitted to a hospital as well as all marriage license applicants. Through the efforts of Indiana physicians and the ISMA staff, the bill was amended so that only a committee to study the AIDS problem was formed, thus preventing a tremendous health care expense to our patients. The First District Medical Society would like to commend the ISMA staff for the excellent pamphlet, "Physician's Guide to Indiana Law," which was published as a pull-out in the March issue of INDIANA MEDICINE.

The First District Medical Society held its Annual Meeting on May 15, 1986. Dr. Gary Beck, First District President-Elect, presided at the meeting. Items of business included: election of First District Officers for 1986-87 and approval of the 1985 minutes and financial statements. The 1986-87 First District Officers are: President, Gary Beck, M.D.; Vice-President, Syed Ali, M.D.; Secretary-Treasurer, Alan Johnson, M.D.; and Trustee, E. DeVerre Gourieux, M.D. We were pleased to welcome Dr. and Mrs. Paul Siebenmorgen, Dr. Shirley Khalouf and her daughter, Stephanie, Dr. and Mrs. Fred Dahling and Sara Klein, ISMA Field Representative. We appreciate their battling of the elements (we had heavy thunderstorms and a tornado!!!) to be with us.

On October 30 through November 2, the 1986 ISMA House of Delegates will convene in Indianapolis. While those of us who were able to attend the 1985 Convention in South Bend enjoyed our visit in the lovely city, we are looking forward to the future conventions in Indianapolis.

I would like to thank Dr. Paul Siebenmorgen and the ISMA Board of Trustees for their recent support of the VCMS opposition to the PCB removal plant in Henderson, Ky.

It is imperative that we continue to be involved with our State Association. If any of the First District physicians are interested in serving on ISMA commissions, please contact me.

Second District Trustee

Submitted by: Paul Wenzler, M.D.

1985-86—The Year of Change. In July of 1985 Dr. Ralph Stewart decided to take further surgical training and resigned as trustee. At the annual 2nd District meeting, Dr. Paul Wenzler was elected to fill his unexpired term as trustee and Dr. Jerome Melchior of Vincennes was elected to alternate trustee.

Don Foy, Executive Director, resigned to become Executive Vice President of the Medical Society of the State of New York. Richard King was appointed the new Executive Director of ISMA.

Originally, the ISMA was to purchase the Foremost Building and move the headquarters, but arrangements could not be worked out to buy the building. The trustees visited the PR Duke building at 9100 Keystone at the Crossing and decided the space was not suitable for the ISMA. The decision was to stay at the present address and to do renovations as necessary.

The ISMA Hospital Medical Staff Section (HMSS) is a new reality. Ably directed by Dr. Robert W. Holden, a working draft of hospital medical staff bylaws is to be reported to the House of Delegates during the ISMA 1986 meeting.

The site of all future ISMA Annual Meetings will be Indianapolis. The Annual Meeting will be held October 30-November 2, 1986 at the Hyatt Regency Hotel in Indianapolis. The 1989 and 1990 sites were selected to be the Radisson Hotel, Indianapolis.

Both my wife, Nancy, and I were nominated and elected in 1985 to the IMPAC board. We have enjoyed serving during this last year. On November 17, 1985, at the organizational meeting of the Board of Trustees, Dr. John Mac Dougall was elected Chairman of the Board.

Dr. Ed Langston, Chairman of the Commission on Legislation, did an excellent job in his summaries of the legislation passed to all ISMA members. This was my 11th year to serve on this commission.

The ISMA Board of Trustees elected not to buy stock in the IPRO since it was changing to a "for profit" status. A resolution will be brought to the 1986 House of Delegates regarding this purchase. We need your input on this matter. Medical Protective has been granted a raise in the malpractice fees due to "regionalization." Watch for other insurance companies to follow an increase in fees.

Looking forward to seeing all the Second District doctors at Linton, Ind., September 3, 1986 and at the Annual ISMA Meeting, October 30, 1986.

Third District Trustee

Submitted by: T. A. Neathamer, M.D.

This past year I have found that it is most difficult to represent you. We

seem to be tilting with windmills. The harder we try, the less we seem to accomplish. The majority of our doctors still feel that the private practice of medicine is by far the best for both the doctor and the patient, yet more and more of our members are signing up for HMOs, PPOs, and the rest of the alphabet soup. We sit in the doctor's lounge and lament the destruction of medicine and then go out and actively support those who would destroy it. We curse the Federal Government for freezing our charges and passing onerous regulation after onerous regulation, then we develop and run their PPOs for them. Too many of us let the dollar rule our actions, instead of standing up for what we believe to be right for our patients. As a result, we now have a situation in which it is impossible many times to represent all our members.

To compound the situation, we are besieged with a myriad of other problems. The malpractice crisis is again rearing its ugly head. Vaccines are soaring out of sight. Hospitals are entering "joint ventures" and the State Board of Health is seeking to increase its scope and power. Insurance companies are taking over the control of the patient with various "cost control" measures.

I see no easy or early resolution to our problem. It may be that there is no solution. It is now more important than ever, however, for us to stand together. Each doctor *must* become active in our state and national association, active in politics, and active in our resistance to the big companies that threaten to bury us. You can start by attending the convention this year.

There are many things you need to be informed about. The following are but a few:

1. Why is the ISMA considering buying stock in IPRO? And should we?
2. What is the State Board of Health planning? Is this good or bad?
3. How successful has IMPAC been?
4. What does our leadership plan in the coming year in the way of new services and support?

Fourth District Trustee

Submitted by: Mark Bevers, M.D.

The Annual Fourth District Meeting was held in Seymour, Indiana this year. I have served as Alternate Trustee for six years and now as Trustee for six years and will be retiring at the end of the year. Dr. William Cooper was elected as the new Trustee and I wish him the best of luck in his endeavors in organized medicine.

Many issues have faced us over the 12 years I have served on the Board, both as a Trustee and as an Alternate. I have enjoyed my service with them. New issues which are developing at this time, which I am deeply concerned with, include the Medical Licensing Board and the various developments of Alternative Health Care Delivery Systems throughout the state.

The Medical Licensing Board has been very difficult to deal with over the last several years. Although we appear to have good rapport with them at this time, they still summarily suspended a physician without a hearing in a local area. This quickly puts a very detrimental appearance on his character, and his practice suffers immensely. I feel that in the future that it should be arranged that discussions and hearings should be held before the suspensions are carried out on the whim of the chairman of such a board.

Furthermore, I am introducing a resolution at this year's House of Delegates calling for the Medical Licensing Board to be required to notify the physician ahead of time before his family or his patients find out on the television or other news media that such a suspension has occurred. I feel that this will be taking a step in the right direction toward improvement of communications with the Medical Licensing Board.

I would like to take the opportunity at this time to thank all of the members of the ISMA staff and all my fellow trustees who I have enjoyed spending my last 12 years with. I certainly do not plan to no longer participate in organized medicine, but hope that I can find a capacity to serve in a different area.

Fifth District Trustee

Submitted by: Benny Ko, M.D.

This has been a good year. During the past legislative session, we have successfully thwarted a number of attempts aimed at further restraint and encroachment of our profession. Despite this modest triumph, we must not forget that the battle is still an ongoing one. Therefore, it is imperative for us to assess our strength and weakness so as to formulate a better strategy for this coming year.

I would attribute our success first and foremost to the changing attitude of the membership. Most of us are essentially saying: "We have been pushed around long enough and we will not take it anymore!" Indeed, in my seven years of active association with the ISMA, last year stood out as the year of enthusiasm and participation. Take for example, the Fifth District annual Physician-Legislative dinner; it was so well attended that the restaurant almost ran out of space. In the course of the evening, the atmosphere was amiable and the conversation, candid. The legislators, I am sure, have heard amply our feelings and opinions on a variety of medically related issues. I was told also by a number of colleagues that they had been regularly calling their legislators, something none of us had thought of doing up to a couple of years ago.

I think this new positive outlook is in part inspired by the leadership of Dr. Siebenmorgen, our current president. The amount of travel he did during this year, in the capacity of ISMA president, must have qualified him for the Globetrotter Award. On the other hand, Mr. Richard King our new executive director, and his laudable staff are much responsible for transforming ideas into concrete actions. I am both proud and grateful to have played a humble part during this exciting year as your district trustee.

Where do we go from here? Does the current success signal a turning point in the preservation of freedom in medicine? As long as we believe in ourselves and believe in the just cause we are struggling for, there is no

reason why we should not overcome, against all odds. So I urge you all to renew our effort, get acquainted with the local legislators and let our voice be heard.

In closing, I would like to list a number of medically related issues that will come into the limelight of the next legislative session. Any, or all physician members should speak out now before they become laws of the land.

1. Total abandonment of drug dispensing from the MD's office
2. Proposals for triplicate prescription utilization
3. Mandatory assignment under Medicare as a provision for medical licensure
4. Mandatory use of motorcycle helmets
5. AIDS—mandatory screening
6. Inclusion of nursing homes under the Indiana Malpractice Act
7. Threatened solvency of the Patient's Compensation Fund.

Sixth District Trustee

Submitted by: C. G. Clarkson, M.D.

This year the 6th District Medical Society met at the Connersville Country Club, Connersville, Ind. There were 29 members present. The business meeting was called to order by the President of the 6th District Medical Society, Dr. Douglas Carter of Shelbyville. Dr. Carter introduced the guests who were present. After the guests were introduced, the minutes were approved. The Treasurer's report was given. The current balance is $2,461. The Treasurer's report was approved. Election of officers was then accomplished. The incoming President will be Douglas W. Morrell of Rushville, Ind. William Nesbitt, M.D., of Connersville, was elected Vice-President. Robert Warren, M.D., of Richmond, was elected Secretary-Treasurer. The next meeting of the 6th District Medical Society will be held at the Forrest Hills Country Club on May 17, 1987. The reservation for that facility has been made on that date. Ray Haas, M.D. was nominated and elected to a three-year term as Alternate Trustee. He had been elected in September 1985 to fill my unexpired term.

Dr. Paul Siebenmorgen, President of the Indiana State Medical Association, made some appropriate remarks and discussed the business of the Association. Dr. Shirley Khalouf, President Elect of the Association, was present and made some remarks and encouraged the local physicians to contact and become acquainted with their local legislators. She encouraged physicians to join IMPAC and become active in political affairs.

In lieu of the planned speaker, John F. Mahoney, Assistant Director of Congressional Relations, American Medical Association, who had originally been scheduled to speak and who could not attend this meeting because of some urgent pending legislative action, Richard King, newly appointed Executive Director of the Indiana State Medical Association, spoke on the subject of Medicare and Medicaid—WHAT THE LAWMAKERS ARE DOING AND WHAT THE PHYSICIAN CAN DO TO HELP. The presentation was informative and well accepted. Questions followed and there was discussion. The business meeting came to a close. Subsequently, at 7:00 dinner was served to 63 members and guests. A hospitality hour was sponsored by the Indiana Physicians Insurance Company and American Physicians Life, Williams/Townsend Agency. After a bountiful meal, a speaker, Reid Duffy, from Channel 6, Indianapolis, entertained the group as an after dinner speaker. The evening was a success.

I, and the members of the 6th District, wish to commend the activities of Bob Sullivan as field representative to the District. His presence has been felt and the activities and business of the Indiana State Medical Association have been better disseminated to the local physician. I hope Bob will continue his efforts and I recommend the State Association encourage Field Representatives to continue their activities.

Finally, I wish to thank Dave W. Ellis for his many years of service as District Trustee. I wish to express that we are fortunate in having his presence in his present position as Medical Director to the Department of Public Welfare.

I shall continue to welcome ideas and suggestions from my District members and hope to be able to convey their wishes as Trustee of the 6th District.

Seventh District Trustees

Submitted by: William Beeson, M.D., John MacDougall, M.D.

The Annual Meeting of the Indiana State Medical Association Seventh District Medical Society was held in Indianapolis on May 21, 1986. Society president, Doctor Malcolm O. Scamahorn, presided over the well attended meeting which was held in the newly renovated Union Station complex. The society was privileged to have as distinguished guests, Dr. Shirley Khalouf, President-Elect of the Indiana State Medical Association, Dr. Herb Khalouf, AMA Alternate Delegate, Dr. George Rawls, ISMA Treasurer, Dr. Max Wesemann, Assistant ISMA Treasurer, Dr. Al Haley, AMA Alternate Delegate, Dr. George Lukemeyer, American College of Physicians, AMA Alternate Delegate and member of the AMA Council on Medical Education, Dr. Bob Clutter, IAFP, 7th District president, Dr. Walter Daly, Dean, IU School of Medicine, and Dr. Davis Ellis, Medical Director-Medicaid-Indiana Department of Public Welfare.

Reports on ISMA activities were made by President-Elect Khalouf, ISMA Board Chairman MacDougall, 7th District Trustee Beeson, AMA Delegate Scamahorn, and ISMA Executive Director Rick King. Dr. Davis Ellis, Medical Director of Medicaid, Indiana Department of Public Welfare, briefly addressed the society and was available to answer physician questions regarding new Medicaid regulations.

Elections for 1986 society officers were conducted, with Dr. John Records becoming president, Dr. Peter Winters assuming the position of President-Elect and Dr. H. Marshall Trusler being reelected secretary-treasurer.

The business meeting was then adjourned and the society reconvened for dinner and was addressed by the Honorable William Hudnut, Mayor of Indianapolis, regarding the revitalization of the Indianapolis-metropolitan area and its statewide effect.

Each year new and more complex challenges face physicians and organized medicine. Last year was no exception.

Implementation of DRGs and implementation of federally mandated peer review continued to occupy a significant position on ISMA agendas. The ad hoc committee appointed by ISMA President Siebenmorgen continued to monitor complaints from member physicians regarding the peer review process and worked closely with IPRO leadership to coordinate a series of educational seminars for ISMA members. The first such seminar was conducted in Indianapolis in June. Additional programs to assist physicians in "coping" with DRGs and more intensified peer review have been planned and should be implemented in the near future.

In recent months the Indiana Peer Review Organization changed to a for-profit corporation. At this time, it is unclear what, if any, changes will result from this action. Implementation of DRGs and peer review are extremely important issues which will certainly continue to be closely observed by your state association.

Possible changes in physician reimbursement for both public and private sector insurance programs, increased competition among physicians, and between physician and allied health personnel, the increasing number of physicians becoming hospital based and the continued malpractice insurance crisis continue to be challenges confronting organized medicine. During the past 12 months each of these issues has been addressed in some form by the ISMA Board of Trustees.

During the coming year round table discussions are planned between county medical society officers, district officers and the ISMA leadership to facilitate communications and coordinate activities and resources. It is hoped that these and other activities will enable us to become increasingly effective in dealing with the complex issues facing our organization.

We appreciate very much the opportunity to serve as your trustees and continue to welcome your comments as we attempt to represent each of you on the ISMA board.

Eighth District Trustee

Submitted by: William VanNess, II, M.D.

This past year has been busy for your trustee and your county leaders. I have been able to attend one or two meetings of each county society. In addition, a meeting has been initiated that includes the trustee, alternate trustee, each county president and secretary. This meeting occurs every three months and is intended to improve communication throughout the entire 8th district.

Our 8th district annual meeting was held June 4th at Delaware Country Club in Muncie. I am happy to say that it was well attended and lively discussion was forthcoming as each county president presented problems that were occurring in their county. Possible approaches to these problems were presented by those in attendance, which included many of our state leaders.

I am looking forward to the next year and certainly plan to continue the improved line of communication that has been established in 1986.

Ninth District Trustee

Submitted by: Max N. Hoffman, M.D.

The survival of the community hospital and many private practitioners, who are subjected to ever increasing governmental controls and regulations, remains the major issue among physicians today. Retrospective review of patient care, with public criticism of the quality of care given while under constant pressure to reduce costs and avoid malpractice suits, are also factors which must be considered as we treat our patients. This theme evolved during the planning session for the district meeting last January. Even though local issues may vary slightly, there was a genuine desire to share knowledge and seek solutions for problems common to all concerned.

Following golf at Harbour Tree Club, Hamilton County served as hosts for our meeting June 11, at Ritz Charles in Carmel, Ind. Those attending the afternoon session benefitted from the discussion of topics and issues including IPRO, HMO, DRG, Key Health Plan etc., who by economic means attempt to regulate physicians and threaten to affect the quality of health care available to our patients.

The talents and devoted service of Dr. Adrian Lanning were again recognized as he was re-elected alternate trustee for another term.

ISMA Executive Director Richard King summarized the changes in law affecting physicians as a result of the recent legislative session. He also stressed the importance of grass roots, one-on-one relationships of physicians with state/national legislators. Political involvement requires local support and financial contributions, both personally and through IMPAC. If ISMA/AMA are to remain effective voices for organized medicine, each of us must actively participate and support generously.

As a trustee, I continue to solicit your comments and assistance as we together attempt to resolve our problems as I represent each of you on the ISMA Board.

Tenth District Trustee

Submitted by: Nicholas L. Polite, M.D.

The Tenth District has been active during the past year. First was the election of the then current Trustee C. Dyke Egnatz, M.D. as Vice Speaker of the House, and then the selection of Alternate Trustee Nicholas L. Polite as Trustee.

The President of the Tenth District, Frank M. Sturdevant, M.D., has also served as Alternate Trustee during the past year and has been active.

The district is financially better than it was. It has paid almost all of its outstanding debt back to Lake County

Medical Society and has initiated a "break even" policy for all events. We anticipate a small surplus by the end of next year.

Our other activities have consisted of investigating joint programs and events between the district and the two societies, Lake and Porter, and utilizing the district as a "unifying" entity for our area for issues of common concern.

The Trustee and Alternate Trustee have actively been involved in all Board meetings and other ISMA activities.

The two counties have also been active. Porter County has studied the issue of indigent care, developed a program for a regular newsletter, held several educational talks, and continued its activity in community programs. Lake County has likewise been active in similar areas. Following are additional activities the counties have undertaken:

... Dinner featuring Harrison Rogers, M.D. and Paul Siebenmorgen, M.D. as speakers

... Planned Tenth District meeting for September 26, 1986, featuring James Todd, M.D., Senior Deputy Executive Vice President, AMA. Meeting will be at Valparaiso Country Club

... Candidacy of C. Dyke Egnatz, M.D., for re-election as Vice Speaker

... Porter County incorporation and creation of a county PAC

... LCMS efforts to obtain amounts owed members under HCI

... Presentation of debt collection seminar

... Participation of LCMS in liability insurance committee on discriminatory rates

... Continued development of the Care Share Program

... Legislative hearing on the needs of the indigent

... Legislative dinner

... Meeting on the needs of future physicians

... Support of activities to maintain medical school share of hotel/motel tax

... Development of "Physician Fees" brochure

... Development of "Patient Opinion" brochure

... Development of "Medical Complaint" form for use with new Medicaid pre-approval requirements

... Legislative activities; revision of key man program

... Commitment of participation by Dental Society and large pharmacy in Care Share

Eleventh District Trustee

Submitted by: Edward L. Langston, M.D.

The 1985-1986 agenda for the Board of Trustees has been quite full. The Eleventh District has had two replacements on the Indiana Medical/Political Action Committee. Due to the resignation of Mrs. Ball, Mrs. Philip Ferguson of Wabash County has been appointed in her place. Dr. Herbert Khalouf has been appointed as the physician representative.

The Annual District Meeting was held on September 18, 1985 in Kokomo. Alternate Trustee Dr. Jack Higgins gave the Board of Trustee's report in my absence. I was attending a Political Seminar in Washington, D.C. and meeting with Congressmen Hillis, Coats, and Burton, and extend my apologies for being unable to attend the annual district meeting. The 1986 meeting will be held on September 17, 1986 in Marion, Ind.

The 11th District submitted a resolution during the 1985 House of Delegates Meeting which would incorporate military physicians in to the Indiana State Medical Association roster. This was passed by the House of Delegates and then referred to the Commission on Constitution and Bylaws to be implemented after a one-year waiting time.

Once again, we expect a lively discussion of current issues at our annual meeting. Dr. Higgins and myself have appreciated the opportunity to represent the 11th District, and would hope that our representation has been reflective of the attitudes of our constituents.

Twelfth District Trustee

Submitted by: M. O. Mellinger, M.D.

1986 — A year of decision of ISMA's Board of Trustees.

Housing

The year started in an atmosphere of decreasing non-dues income primarily because of declining interest rates. It may have been a year of opportunity for some but to an organization such as ISMA bound to conservative, guaranteed investment of assets, it was a very difficult year to balance the budget. At the outset of 1986, it became obvious that declining interest income and moving out of headquarters to a new location seemed incompatible without a substantial increase in income. An eleventh hour decision to scrap plans to move to Keystone at the Crossing seemed most consistent with fiscal responsibility. I commend the ISMA staff for the positive attitude toward our current North Meridian location.

Non-dues income is a controversial issue in and of itself. Although our non-dues income is modest, it has allowed ISMA to provide a vast array of membership services (see reports of Commission on Medical Services and Subcommission on Insurance) with one of the lowest dues structures in the Midwest. We intend to keep it that way.

Executive Director

Shortly after the 1985 Annual Meeting, Don Foy announced his intent to join the State of New York Medical Society as its Executive Vice-President. Don is the first non-physician to hold this position. Don gave untiringly of his considerable talent to ISMA for 10 years. We wish him well.

We have an excellent replacement for Don in Richard King, II. Rick, an attorney, has served ISMA since 1976 as General Counsel and in 1984 was appointed Associate Executive Director. He has been the central force in ISMA's lobbying efforts and is well-known and respected by Indiana's law makers.

Legislation

I consider the lobbying effort the most underappreciated and one of the most important functions of ISMA. I have no doubt that without ISMA's lobbying activities we would have some or all of the following:

-unlimited therapeutic substitution by pharmacists

-triplicate prescriptions with one copy of everything being retained by the Indiana State Police

-no dispensing of any prescription drugs by physicians

-HTLV-III testing on all hospital admissions and premaritals

-higher dollar limits in Indiana medical malpractice cases with huge increases in premiums like most other states are experiencing.

Most of these issues keep coming back to the legislature year after year. Rick King and staff have been extremely effective in this area and we look forward to a productive future.

IPRO Ownership

In 1986, IPRO (Indiana Peer Review Organization) became a for-profit corporation. Partial ownership (30%) was offered to ISMA. In a closely contested roll call vote (11-7) the Board refused to accept this offer. There are delicate philosophical, if not ethical, issues involved here. There is no doubt that IPRO is an efficient organization (IPRO just won the Medicare contract for review in the state of Kentucky). There also is no doubt that IPRO is not entirely autonomous, operating under severe restraints and guidelines (quotas?) imposed by the federal government.

The Board felt this issue was of sufficient importance to be considered by the House of Delegates. Our intent is to present a neutral resolution to the House for a yes or no decision.

I appreciate the opportunity of serving as Twelfth District Trustee and welcome any suggestions, constructive or critical.

Thirteenth District Trustee

Submitted by: Steven M. Yoder, M.D.

I have both good and bad to report from my district in the past year. I'll begin by reporting on our annual meeting that was held in Michigan City on September 11, 1985. As usual, representation was good from ISMA leadership but poor from members of our district. I will have some suggestions later in my report about ways to help remedy this situation. At that meeting, our district voted to pay a $75 per diem to the trustee and alternate trustee during the annual meeting.

In November 1985, the ISMA annual meeting was held at Century Center in South Bend. I would like to commend the St. Joseph County Medical Society on an excellent meeting in our district.

It was with deep regret that the president of the 13th district accepted the resignation of Dr. John Luce as Trustee of the 13th District. His resignation was the result of an increased need for his time by his family, and Dr. Luce is to be highly commended for placing his priorities in such a manner. He will be greatly missed on the Board of Trustees. He has been a very active and vocal member of the board, especially with regard to IPRO. He served on an ad hoc committee of the Board on IPRO relations and was himself instrumental in getting IPRO to change some of their policies to make the review process more tolerable for ISMA members. I will find it very hard to fill Dr. Luce's shoes in this area.

As stated earlier in this report, I would like to suggest a few ways that attendance might be increased at district meetings. Promoting contested elections of qualified candidates might be one way. Providing special recognition at the ISMA Annual Meeting of counties or districts with the highest percentage of attendance at district meetings would be another. This could be in the form of a plaque, resolution, or even a monetary award to pay for a speaker at one of their meetings.

Report of the Editor, Indiana Medicine

CONTINUED FROM PAGE 916

Contributed scientific and socioeconomic articles, together with a few requested submissions, have been adequate to supply the readership with a wide-ranging coverage of clinical and practical discussions.

The pediatric and adult critical care series, the CME series and a new collection of dermatologic articles have dealt with the recent advances.

And, the big problem—AIDS—has been covered as it develops by articles and outlines of the basic scientific knowledge.

Together with the Resident Medical Society of the ISMA, INDIANA MEDICINE conducted an essay contest open to residents in training who are members of the Association. Publication of the award winners has started. The contest will continue in 1986-87.

Selected and well edited records of the I.U. Medical Center Clinico-Pathologic Conferences will continue to be published.

A new feature consists of a series, "Medicine's Lighter Moments" by Dr. Ted Grisell. Comments and discussions of the subject matters covered are invited and several learned dissertations of this nature have already been received via the Post Office.

A readership survey was conducted this year to solicit opinions and suggestions concerning the CME series. Answers have been tabulated by the computer and will serve to guide the production and publication of this popular feature.

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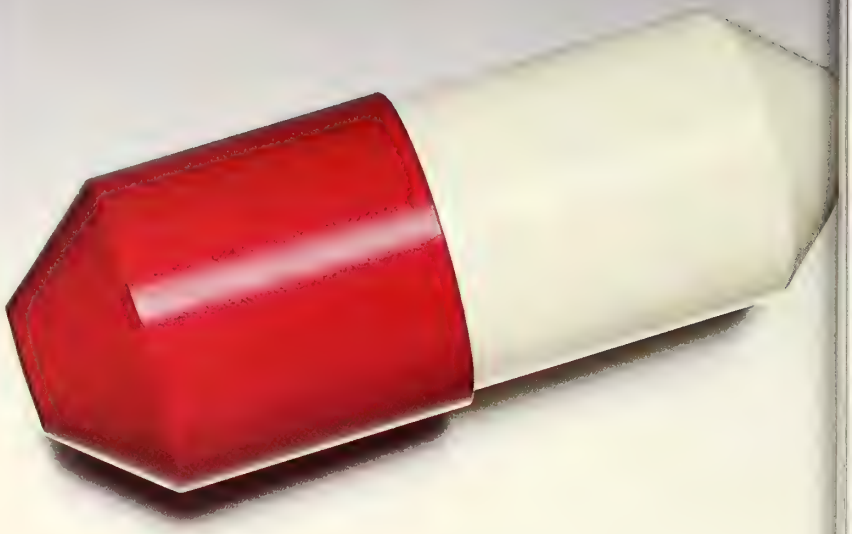
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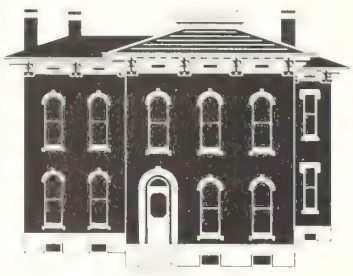
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NEWS NOTES

M.D. Does Not Have to Pay to Rear Child Born After Vasectomy

Parents of a child born after an un successful vasectomy could not recover the cost of rearing the child from the physician, an Indiana appellate court ruled.

The father had a vasectomy February 11, 1981. About two weeks later the physician performed a test on a sperm sample and informed the father that he was in fact sterile. On July 22, 1982, the mother gave birth to a daughter who had a complete bilateral cleft of the lip, jaw, and palate.

The parents filed suit on their own behalf against the physician for negligence in performing the vasectomy, failing to perform adequate and available testing to verify sterility, and failure to adequately explain the risks and benefits of surgery. They sought damages for medical expenses incurred for the birth and future medical expenses for care of the infant, costs of raising the child to maturity, and damages for mental and physical suf fering and mental and emotional anguish suffered as a result of the deformity of the child. A trial court dismissed their action for failure to state a cause of action recognized in Indiana, and they appealed.

Reversing the decision, the appellate court said that Indiana did recognize a cause of action in negligence for wrongful pregnancy, as distinguished from wrongful birth and wrongful life. Recognizing that the more difficult issue was the measure of damages to be allowed the parents, the court said that the policy considerations most pursuasive to Indiana led to the denial of costs of rearing the child. Recovery of such costs would result in the penalty wholly out of proportion to the culpability involved.

There was no evidence that the physician's alleged negligence caused the child's birth defect or increased the probability of the child being born with a birth defect. Therefore, the deformity of the child and the attendant increased costs from the deformity could not be recovered from the physician. The court said that possible damages that could be recovered were limited to those directly caused by the unsuccessful sterilization and resulting pregnancy and did not include the costs of raising the child nor exceptional expenses associated with the child's defect.—*Garrison v. Foy*, 486 N.E.2d 5 (Ind.Ct. of App., Dec. 11, 1985) (Courtesy of *The Citation*, July 1, 1986)

William T. Green, M.D.—An Inspirational Teacher

William T. Green, A.B. 1921, A.M. 1922 and M.D. 1925, Indiana University died on July 23, 1986 at the age of 84, after a long illness. Dr. Green had his postgraduate training at Indiana University Hospital, Henry Ford Hospital and Peter Bent Brigham Hospital. In 1967 he retired as Harriet M. Peabody Professor of Orthopaedic Surgery at the Harvard Medical School, and as Orthopaedic Surgeon in Chief at the Peter Bent Brigham Hospital and the Robert Breck Brigham Hospital.

Dr. Green's special interests included normal skeletal growth and its disturbances, the care of crippled children, the management of cerebral palsy and the treatment of poliomyelitis.

Dr. Green was a member and erstwhile president of the national orthopaedic societies and the founder of two of them.

He was especially recognized and celebrated for his love of and skill in teaching. Indiana University conferred the degree of Honorary Doctorate of Science in 1960 with this citation: "You have manifested a striking interest in the work of the medical student at every level, and a great talent for teaching, so that former students of yours are now in positions of great responsibility and trust as a result of your inspiration and example." He is survived by his wife Gladys, three children and his sister Jean (Mrs. Frank H. Green) of Rushville.

Governor Appoints Task Force to Study Transplant Policy

Governor Robert Orr has appointed three ISMA members to serve on a task force that will study organ transplantation.

Dr. John D. MacDougall, chairman of the ISMA Board of Trustees, Dr. Walter Daly, dean of the I.U. School of Medicine, and Dr. Frank Lloyd, president of Methodist Hospital of Indiana, are among the 12 persons named to the task force.

The task force will consider equity of access, finance, quality control, uniform criteria of selection and statute changes, according to the governor. A final report from the task force will be due by Nov. 30, 1987.

Dr. Woodrow A. Myers Jr., commissioner of the Indiana State Board of Health, will be chairman of the task force.

RAX Raises $32,000 for Camp Riley Kids

RAX Restaurants in Indiana experienced their best year in 1986 in their campaign to raise money to assist youngsters to attend Camp Riley for Youth with Physical Disabilities. Each of the 44 RAX Restauarants in the state donated 20 cents for each large drink sold and also encouraged customer donations by maintaining fish bowls into which small change could be dropped. 1986 was their biggest year with over $32,000 collected to "Send-A-Kid-To-Camp."

Medicare Fraud Hotline

Blue Cross-Blue Shield has established a toll free Medicare Fraud Hotline for patients who suspect "fraud or abuse." The number is 1-800-52-FRAUD.

Calls made to the hotline between 9 a.m. and noon are answered by an investigator. Callers after noon hear a recording that asks them to leave their name and phone number.

For the Asking . . .

• **The National Conference of High Blood Pressure Control** is seeking nominations of both individuals and organizations for its 1987 awards program. The awards will be presented during the 1987 conference, April 24-26, in Las Vegas. Nominations are due by Dec. 1, 1986. Forms and further information are available from the Conference Headquarters, National Conference on High Blood Pressure Control, 2121 Wisconsin Ave., N.W., Washington, D.C. 20007—(202) 944-3176.

• **"How can I decide which child abuse programs are effective and meet my needs?"** The question is pertinent because such programs seem to multiply almost daily. The National Committee for Prevention of Child Abuse (NCPCA) has published a pamphlet that should help. It's called "Guidelines for Child Abuse Prevention Programs." To order a single copy, send a check for $2.50 to NCPCA at 332 S. Michigan Ave., Chicago 60604, or call (312) 663-3520 for quantity prices and a free catalog of all NCPCA publications.

• **"Age Words: A Glossary on Health and Aging"** is the title of a new publication of the National Institute on Aging. It defines 275 basic terms frequently used by gerontologists and is designed for a general audience—including older people and their families, students in the field of aging, librarians, medical reporters, health care providers, and others with a special interest in older persons. For a free copy, write to the NIA Information Center/AW, 2209 Distribution Circle, Silver Spring, Md. 20910—(301) 495-3455. Multiple copies may be purchased from the Government Printing Office for $2 each. Bulk orders of 100 or more will receive a 25% discount. Make checks payable to the Superintendent of Documents. Please indicate stock number 017-062-00138-3 and send to the Superintendent, U.S. Government Printing Office, Washington, D.C. 20402.

• **"Employer Health Care Cost Containment"** is the title of a book dealing with the problem of cutting employer health care costs. It has been released by the Wharton School of the University of Pennsylvania, and is available in paperback for $62.75 prepaid. Write Jennifer Conway, Series Editor, Leonard Davis Institute of Health Economics, University of Pennsylvania, 3641 Locust Walk, Philadelphia 19104.

• **The W. K. Kellogg Foundation** is continuing its National Fellowship Program. It is designed to prepare leaders who can function effectively and knowledgeably in dealing with complex problems where narrow expertise is not sufficient. Fellows may not be accompanied by spouses or dependents. The award includes $30,000 for the development and completion of the learning plan. In addition, 12½% of the Fellow's salary, not to exceed $20,000 for the three years, will be reimbursed to the sponsoring/employing institution. An additional $4,000 is included to be used only for travel expenses incurred while participating in the seven required seminars. For complete information and applications, contact the Foundation at 400 North Ave., Battle Creek, Mich. 49017—(616) 968-1611.

Vanderburgh County Introduces the 'Monitor'

The Vanderburgh County Medical Society began "a new venture in communications" this summer with its first issue of the *Monitor*, a bi-monthly magazine being edited by Debbie Stroessner, VCMS's executive director.

The new publication features both display and classified advertising. Its editorial contents include a president's page, an auxiliary page, a calendar of events, letters to the editor, and a feature called "Community Close-up." The first issue also carries a special article on tax reform.

The *Monitor* is a high quality, full-sized publication with a pleasing visual impact.

Lilly's Role in the Discovery of Insulin To Be Discussed

A lecture and slide show will be part of the Indiana Medical History Museum's session during the ISMA convention.

The museum's meeting will begin at 3:30 p.m., Saturday, Nov. 1. Michael Bliss, Ph.D., will present "Indiana and the Discovery of Insulin: The Role of Eli Lilly and Company." He is a professor at the University of Toronto.

Fertility Society Issues Ethical Guidelines

The revolutionary new technologies in human reproduction developed over the past few years have raised a number of legal, ethical, moral and social questions that have gone unanswered. Such medical techniques as in vitro fertilization, freezing of embryos and surrogacy have left both prospective parents and much of the medical profession in doubt as to the propriety of these techniques.

In an effort to answer these questions, the American Fertility Society last year assembled a distinguished Ethics Committee to study the complex issues involved. Their final report and guidelines appear in the September issue of *Fertility and Sterility*, the Society's official journal.



"It probably says 'Diet-aids are on Aisle Six.'"

NEWS NOTES

Physician Loses Hospital Staff Privileges Suit

A private hospital was entitled to summary judgment in a terminated anesthesiologist's action against it, a federal trial court in Indiana ruled.

The physician was an employee of the anesthesiology group that had an exclusive contract to provide anesthesiology services to the hospital. She was granted probationary staff privileges at the hospital. Shortly after she was granted those privileges, the hospital entered into a new exclusive contract for anesthesiology services. The new independent contractor also became head of the anesthesiology department. The physician and one other physician who had staff privileges were allowed to continue to practice anesthesiology at the hospital.

The new exclusive provider of anesthesiology services formally evaluated the physician's work and found it unsatisfactory. She was allowed to retain her probationary staff privileges for an additional three months. Her medical ability and performance did not change during that time.

After review by various hospital committees, the physician's probationary staff privileges were suspended by the hospital in October 1982. And, in January 1983, her staff privileges were terminated. The basis for termination was stated as her poor performance.

She filed an action against the hospital, seeking reinstatement of her privileges and money damages based on alleged violations of federal antitrust laws, federal constitutional rights, and unfair action by the hospital.

On a motion by the hospital, the trial court granted summary judgment in its favor. The exclusive services contract between the hospital and the independent contractor anesthesiologist was not illegal under federal antitrust laws. The fact that the hospital's decision to terminate her staff privileges caused her loss of income and apparent inability to practice anesthesiology at other area hospitals also would not support her claim under antitrust laws. She could not make a showing that the state was responsible in any way for her termination and therefore had no claim for a civil rights violation. Finally, procedures used by the hospital in denying her staff privileges were in accordance with the hospital's bylaws.—*Ezpeleta v. Sisters of Mercy Health Corporation*, 621 F. Supp. 1262 (D.C., Ind., July 9, 1985) (Courtesy of *The Citation*, June 15, 1986)

A Double Honor

Dr. Borys Surawicz, Professor of Medicine at the Indiana University School of Medicine and Senior Research Associate of the Krannert Institute of Cardiology, was nominated by the President of the World Congress of Cardiology and the Executive Board of the International Society and Federation of Cardiology to be the special lecturer for the Tenth World Congress of Cardiology on September 19, in Washington, D.C. The subject of his special lecture was "The Relation Between Ventricular Arrhythmias and Sudden Cardiac Death."

Dr. Surawicz was also invited to deliver the second Annual Ueda Lecture to honor the recently retired leader of Japanese Cardiology, Professor H. Ueda. This lecture, entitled "Electrical Safety and Vulnerability of the Heart" will be given at the meeting of Japanese Society of Electrocardiology on October 18 in Osaka, Japan.

IAP Annual Meeting

The Annual Meeting of the U.S.-Canadian Division of the International Academy of Pathology will be held at the Palmer House, Chicago, March 8-13.

Full information may be obtained from Dr. Nathan Kaufman, Bldg. C, Suite B, 3515 Wheeler Road, Augusta, Ga. 30909—(404) 733-7550.

Here and There . . .

Dr. Larry L. Heck of Indianapolis has been selected by Harvard University to serve on a consultant panel of eight physicians specializing in radiology and nuclear medicine; the panel will study the resource based relative value scale for use in physician reimbursement under Medicare.

Dr. Glen A. Lehman of Indianapolis, a specialist in internal medicine and gastroenterology, has been elected to fellowship in the American College of Physicians.

Drs. John R. McCarroll and **Arthur C. Rettig** of Indianapolis presented papers at the recent meeting in Sun Valley, Idaho, of the American Orthopaedic Society for Sports Medicine. At the same meeting, **Dr. Thomas A. Brady**, also of Indianapolis, was granted honorary membership in the National Athletic Trainers Association.

Drs. John L. Jenkins and **Joel R. Wachs**, South Bend cardiologists, have been certified in cardiovascular disease by the American Board of Internal Medicine.

Dr. Michael D. Howard of LaPorte was guest speaker at the July meeting of the local Diabetic Support Group.

Dr. John A. Knote of Lafayette, a former ISMA president, has assumed the presidency of the Organization of State Medical Association Presidents (OSMAP).

Dr. David A. Josephson, an Indianapolis neurologist, was a guest speaker at a July symposium sponsored by the United Parkinson Foundation.

Dr. Charles J. Rebesco of Hobart spoke on "The Definition and Management of Chronic Respiratory Diseases" at a July meeting in Crown Point of the St. Anthony Medical Center's chronic lung disease support group.

Dr. Frederick C. Robinson of Lafayette has been certified as an accredited clinical polysomnographer by the Association of Sleep Disorders Centers.

New ISMA Members

Steven J. Beltz, M.D., Brazil, emergency medicine.

William D. Fisher, D.O., Richmond, general practice.

Mark V. Fletcher, M.D., Indianapolis, anesthesiology.

Eric G. Guidero, M.D., Amboy, family practice.

Akhter F. Husain, M.D., Logansport, psychiatry.

Daniel R. Johnson, D.O., Gosport, orthopedic surgery.

Urmi P. Kalokhe, M.D., Hammond, therapeutic radiology.

S. Theresa Kim, M.D., Indianapolis, physical medicine and rehabilitation.

Joseph M. Long, M.D., South Bend, physical medicine and rehabilitation.

Hector J. Marchand, M.D., Valparaiso, cardiovascular diseases.

Jeffrey E. Miller, M.D., Valparaiso, pediatrics.

Ghanshym Patel, M.D., Hobart, internal medicine.

Abdul Wase, M.D., Merrillville, in-

Ind. Med.—Oct., job no. 9497, rdb, mcs, galley: 70

Residents:

David F. Box, M.D., Indianapolis, ophthalmology.

Kathryn L. Brecht, M.D., Elkhart, otorhinolaryngology.

Gregory W. Brown, M.D., Indianapolis, pathology.

Joseph M. Caruso, M.D., South Bend, family practice.

Yudu Chen, M.D., Warsaw, internal medicine.

Anne C. Clark, M.D., Indianapolis, ophthalmology.

G. Gregory Clark, M.D., Indianapolis, ophthalmology.

Kristine A. Courtney, M.D., Indianapolis, obstetrics and gynecology.

Maureen W. Darcy, M.D., Indianapolis, internal medicine.

Mark A. Deaton, M.D., Indianapolis, otorhinolaryngology.

Joseph V. Edwards, M.D., Indianapolis, psychiatry.

Lucinda K. Geis, M.D., Indianapolis, general surgery.

Michael J. Goodman, M.D., Muncie, family practice.

Jeffrey F. Granger, M.D., Logansport, orthopedic surgery.

Lisa L. Green, M.D., Indianapolis, pediatrics.

Charles R. Harris, M.D., Arcadia, family practice.

Larry J. Hattel, M.D., Seymour, internal medicine.

Robert J. Helm, M.D., Muncie, family practice.

Bruce W. Hughes, M.D., Kokomo, pathology.

Teresa P. Jones, M.D., Indianapolis, family practice.

Joseph J. Kenny, M.D., Beech Grove, family practice.

Karen C. Klee, M.D., Indianapolis, internal medicine.

Anton N. Kojouharov, M.D., Fort Wayne, family practice.

Kevin K. Kruse, M.D., Indianapolis, internal medicine.

Elizabeth J. Mann, M.D., Richmond, pediatrics.

Steven S. Maves, M.D., Muncie, anesthesiology.

Ben H. Nelson, M.D., Goshen, orthopedic surgery.

Laryn A. Peterson, M.D., Indianapolis, otorhinolaryngology.

Lemoyne R. Pringle, M.D., Danville, general surgery.

William C. Sando, M.D., Indianapolis, plastic surgery.

John C. Sorg, M.D., Indianapolis, internal medicine.

Brett A. Stephens, M.D., Fort Wayne, diagnostic radiology.

James C. Stevens, M.D., Indianapolis, neurology.

L. Louise Tetrick, M.D., Indianapolis, pediatrics.

Barry C. Weaver, M.D., Indianapolis, pediatrics.

Tim M. Whetsel, M.D., Indianapolis, internal medicine.

Richard D. Zeph, M.D., Indianapolis, otorhinolaryngology.

Request for Information

Charcot-Marie-Tooth disease, known also as Peroneal Muscular Atrophy, is a fairly rare, inherited, neuro-muscular disorder. There is a voluntary international organization known as C•M•T International that is dedicated to encouraging research for treatment of the disease. C•M•T is also constructing an international register of patients with the malady and requests that information on patients, now unknown to the organization, be registered by writing or phoning Blaine Coomer, 725 Summitcrest Dr., Indianapolis 46241—(317) 247-6396.

Physician Recognition Awards

The following ISMA physicians are recent recipients of the AMA's Physician Recognition Award. This award is official documentation of Continuing Medical Education hours earned, and is acceptable proof in most states requiring CME in re-registration that the mandatory hours of CME have been accomplished.

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Bojrab, Louis D., Carmel
Ellis, George M., Connersville
Haggerty, Fred E., Greencastle
Hussey, Lawrence K., South Bend
Kaliney, William J., South Bend
Lee, Thomas M., Hartford City
Lucas, Owen H., Chesterton
Luce, John W., Michigan City
Morton, Anita L., Bluffton
Roch, L. Marshall, Muncie
Rold, James F., Evansville
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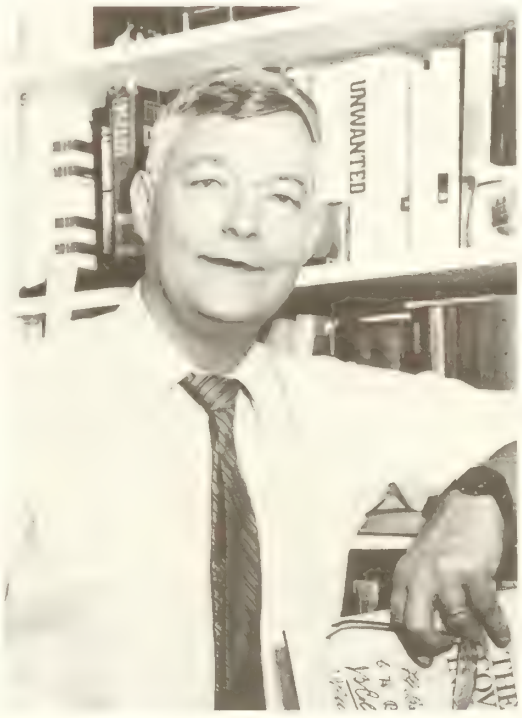
Number 8 October, 1986

A NEWSLETTER OF INDIANA MEDICAL HISTORY

Society's Annual History Conference Features Sessions on Indiana's Pharmaceutical History

Author and noted scholar Michael Bliss, Ph.D., will be the keynote speaker for the Medical History Committee's sessions at the Indiana Historical Society's Annual History Conference to be held on Saturday, November 1, at the Airport Holiday Inn. The Committee's sessions will focus on the state's pharmaceutical history and in particular on Indiana's two largest drug firms, Eli Lilly and Company in Indianapolis and Miles Laboratories in Elkhart. Bliss, a professor at the University of Toronto and the author of *The Discovery of Insulin*, will present a lecture and slide show entitled "Indiana and the Discovery of Insulin: The Role of the Eli Lilly and Company."

The Eli Lilly and Company was founded in 1876 by Colonel Eli Lilly. His only son, Josiah Kirby Lilly, at age sixteen became a member of the original work force. Since its founding, the company produced ethical medications, rather than patent or proprietary nostrums. Among the early products manufactured and sold by the company were gelatin and sugar-coated pills, elixirs, fluid extracts, and a few medicinal wines. Early in its history the firm saw the need for scientific research. In 1886 Ernest G. Eberhardt, a Purdue graduate, was hired as the company's first chemist. The work he began eventually evolved into the company's research department. At the end of World War I the company began an even more extensive campaign to improve its relationship with the scientific community. In 1919 George H. Clowes, an Englishman who held a doctorate in chemistry, was hired by the firm. In 1921-22 insulin was discovered at the University of Toronto by Frederick G. Banting, Charles H. Best, John James Rickard McCleod, and James B. Collip. Clowes, who had closely followed the work of these Toronto researchers, was instrumental in convincing them to grant a one-year exclusive license to the Eli Lilly and Company to manufacture and clinically test the drug. Lilly's work with insulin transformed the company from a major force in the pharmaceutical industry to a dominant one. In 1932 Colonel Lilly's grandson, Eli Lilly, became president of the



Michael Bliss

firm. Under his guidance, research became an even more important part of the company. A new three-story research building was dedicated in October, 1934. Among the guests present for the dedication was Sir Frederick Banting, one of the discoverers of insulin.

In preparing his book Bliss used the research notes, unpublished memoirs, and papers of the discoverers of insulin. His book received the Hannah Medal of the Royal Society of Canada, the Welch Medal of the American Association for the History of Medicine, and the City of Toronto Book Award. Bliss is also the author of numerous articles pertaining to the medical and economic history of

(continued on Page 3)

"Opposed to Pain": A History of the Antikamnia Chemical Company

By Katherine Mandusic McDonell

During the late nineteenth century the public was bombarded with thousands of advertisements for patent medicines. These medicines contained one or more secret ingredients and were purported to cure a wide variety of diseases. Some nostrums contained worthless, often dangerous, chemicals. Others, known as the "pseudo-ethical" patent medicines, contained ingredients which did have therapeutic value if prescribed with caution. Yet, like all patent medicines, the claims for these pseudo-ethical medicines were exaggerated, and the dangers of the ingredients were not fully explained. Moreover, most of these nostrums were prepared by seemingly reputable pharmaceutical companies and were marketed to the professional medical community as regular medication. Many poorly trained doctors thus did not recognize the danger of prescribing the pseudo-ethicals. One of the most notorious of these patent medicines was Antikamnia, a popular nostrum manufactured by the Antikamnia Chemical Company of St. Louis.

The Antikamnia Chemical Company was founded in the late 1880s when two St. Louis druggists, Frank A. Ruf and Louis E. Frost, began compounding a headache and neuralgia medication which they named Antikamnia (which means "opposed to pain"). Their new drug enjoyed tremendous success, so in 1891 they incorporated a company to manufacture it. Given the



1898 Antikamnia calendar

phenomenal success of Antikamnia, it was soon evident that the drug could no longer be manufactured in the tiny drugstore operated by Ruf and Frost. Thus, the company moved to larger headquarters in St. Louis, and at the same time a financial backer named John Cox joined the firm.

Louis E. Frost's tenure with the company was short-lived. He sold his shares in the firm in 1892, leaving Cox and Ruf to run the company. Under Cox and Ruf's management the company prospered. Twice within six years the company had to move to larger headquarters. The company also expanded its product line to include such items as Antikamnia Tablets and Antikamnia Powder. Although the drug was marketed primarily to physicians, all Antikamnia products were sold over the counter.

The major ingredient in Antikamnia was acetanilid, an analgesic and antipyretic medicine. Acetanilid was extremely dangerous since it broke down into the poison aniline in the stomach. The effects were cumulative, so that continued use or large doses of the drug could result in death. Also, the drug caused minor withdrawal problems. Before 1906, however, drug manufacturers were not required to disclose the ingredients in their drugs. In 1906 the Pure Food and Drug Act required that medications containing dangerous drugs be appropriately labeled. By this time the medicine acetanilid had received such bad publicity that the Antikamnia Company thought it unwise to admit that their product contained a dangerous substance. Thus they substituted acetphenetidin for acetanilid. Acetphenetidin, however, is merely a derivative of acetanilid and thus has the same ill effects when taken over a period of time or in large doses. Yet, the general public was not aware of the effects of acetphenetidin. It

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ISSN 0743-6033

Snakeroot Extract is a joint publication of the Indiana Historical Society's Medical History Committee (315 West Ohio Street, Indianapolis, Indiana 46202) and the Indiana Medical History Museum (Old Pathology Building, 3000 West Washington Street, Indianapolis, Indiana 46222). The newsletter is mailed to members of both the committee and the museum.

Charles A. Bonsett, M.D., *Editor*
Ann G. Carmichael, MD., Ph.D., *Asst. Editor*
Katherine Mandusic McDonell, *Managing Editor*

Submit all items for publication in the newsletter and inquiries about membership information to the Managing Editor, c/o Indiana Historical Society, 315 West Ohio Street, Indianapolis, Indiana 46202.

Snakeroot Extract derives its name from the white snakeroot plant, a plant that is significant in Indiana medical history. For years, a mysterious disease called milk sickness plagued early Hoosiers. There were many theories as to the disease's cause, but the actual cause remained unknown until the 1920s. At that time, the disease was traced to the white snakeroot plant or, rather, to the consumption of milk from cows that had eaten it. The plant contains the poison tremetol.

"Opposed to Pain"

(continued from Page 2)

1910 the United States government sued the Antikamnia Company claiming that a recently added regulation to the 1906 Food and Drug Act required the Antikamnia Company to state on its label that acetphenetidin was a derivative of acetanilid. The lower courts ruled, however, that the government had illegally added regulations to the original Food and Drug Act. In 1914 the case was heard by the United States Supreme Court, which overruled the lower courts' decision.

Despite this setback the company continued in business. It was reincorporated in 1919 under the name of the Antikamnia Remedy Company. Cox and Ruf continued as the company's owners. In 1923, Ruf died and the business of the company steadily declined until it was sold in 1930 to the Block Drug Company, then located in Brooklyn, New York. The Block Drug Company continued to manufacture Antikamnia, but sales continued to fall. The company ceased production of the drug in 1950.

During its heyday the company spent large sums of money on advertising. Antikamnia was marketed primarily to doctors, but newspapers, almanacs, and theater programs carried advertisements for the drug. Moreover, the company employed direct mail techniques by sending form letters with samples of the drug to certain segments of the public. The form letters, as well as many of the advertisements, always began: "Do you ever suffer pain? If so, try Antikamnia." The company also printed calendars and distributed them to physicians, pharmacists, and the general public.



1898 Antikamnia calendar

The company's early calendars are particularly interesting. Recently, Jack L. New of Greenfield, Indiana, donated to the Indiana Historical Society Library Antikamnia calendars dating from 1897 and 1898. Each page of the calendars contain two months' dates and a masterfully executed drawing of a fully clothed skeleton. These early calendars were illustrated by Louis Crusius (1862-1898), a St. Louis physician and artist. Crusius was both a trained pharmacist and physician. Upon his graduation from the St. Louis College of Physicians and Surgeons in 1890, he entered private medical practice. He also became a professor of histology at the Marion Sims Medical College in St. Louis. Throughout his career Crusius demonstrated his skills as an artist, publishing in 1893 *Funny Bone*, a book containing many of his drawings. Crusius also had a keen sense of humor. Once a colleague borrowed a surgical clamp from him, but failed to return it. Crusius sent the physician a postcard. The card contained a cartoon showing Crusius strangling the other physician with a gigantic surgical clamp. The other physician promptly returned the borrowed item!

AUTHOR'S NOTE: Sources utilized in compiling this article include: William C. Fiedler, "ANTIKAMNIA: The Story of a Pseudo-ethical Pharmaceutical," *Pharmacy in History*, Vol. 21 (1979) No. 2; American Medical Association, *Nostrums and Quackery*, 2nd ed. (Chicago: American Medical Association Press, 1912), pp. 494-99; James Harvey Young, *The Toadstool Millionaires: A Social History of Patent Medicines in America before Federal Regulation* (Princeton, New Jersey: Princeton University Press, 1972), p. 207; and James Harvey Young, *The Medical Messiahs: A Social History of Health Quackery in Twentieth-Century America* (Princeton, New Jersey: Princeton University Press, 1967), 4-12. Information about Louis Crusius was obtained from the information files at the St. Louis Science Center, St. Louis, Missouri.

Society Features Sessions

(continued from Page 1)

Canada. He is currently working on a book entitled *Northern Enterprise: Five Centuries of Canadian Business,* which will be published in 1987. In addition to his scholarly work, Professor Bliss has written extensively in Canadian magazines and newspapers and has won national magazine awards for both his business and political writing.

The morning session will also include two other papers on the Eli Lilly and Company. Helen L. Davidson, the former archivist of the company and currently the volunteer curatorial assistant at the Indiana Medical History Museum, will present a lecture and slide show entitled, "Humble Beginnings: A Brief History of the Eli Lilly and Company." Davidson worked at the company for twenty-six years and is well known in the field of business archives. James H. Madison, Ph.D., will talk about "Eli Lilly and the Revolution on McCarty Street." Madison is associate professor of history at Indiana University and is editor of the *Indiana Magazine of History*. He has

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Society Features Sessions

(continued from Page 3)

authored several books on the history of Indiana and is currently working on a biography of Eli Lilly.

The afternoon sessions will focus on Miles Laboratories in Elkhart, Indiana. Although Miles and Lilly were very different pharmaceutical firms, both were highly successful. Miles Laboratories was founded by Dr. Franklin Miles, an eye and ear specialist in Elkhart, Indiana. His company manufactured and sold "Miles' Restorative Nervine." While his tonic was successful, true commercial success came when businessmen Albert Beardsley and George Compton joined the firm in 1889. Under their leadership the company undertook elaborate marketing and advertising campaigns and expanded its line of products to include Dr. Miles' Restorative Blood Purifier and Dr. Miles' Heart Cure. The introduction of Alka-Seltzer in 1931 catapulted the company into the category of a modern pharmaceutical laboratory. Later the company introduced products such as Bactine and One-A-Day vitamins. In the 1950s the company expanded its staff of chemists and introduced less commercially-oriented items such as Clinitest and Clinistix. Clinitest was an effervescent tablet used to test for sugar in the urine, a sign of diabetes. Clinitest greatly simplified the laboratory procedures for urine testing. In 1956 the company introduced Clinistix dip-and-read strips for detecting sugar in the urine. The test could be performed in ten seconds.

Elizabeth S. Lott, Ph.D., a staff writer for the Miles public relations department, will give a paper and slide presentation entitled: "An Overview of Miles Laboratories: From Kitchen Kettle to Modern Drugs." Miles information scientist Celeste Aaron Ringuette will present a paper entitled: "Proprietary Medicines and Research in an Age of Transition (1938-1951)." Ringuette's paper will focus on the Institute for Analgesic and Sedative Drugs. This institute was started in 1938 by George Compton to study the ingredients of the early proprietary medicines and determine their therapeutic value. The afternoon session will conclude with a paper by Donald N. Yates, Ph.D., entitled "The Origin of Alka Seltzer." Yates is supervisor of employee communications at Miles and last year was responsible for bringing the exhibit "Miles: The First Century" to the Indiana Historical Society.

Those interested in attending these sessions on Indiana's pharmaceutical history must register for the Indiana History Conference. The program begins at 9 a.m. on Saturday, November 1, at the Airport Holiday Inn. The registration fee is $3.00. For more information about the conference, and luncheon reservations, contact the Indiana Historical Society, 315 West Ohio Street, Indianapolis, Indiana 46202 (317/232-1882).

NOTE: *For those physicians who will be unable to attend the lecture on the discovery of insulin in the morning, Michael Bliss will repeat his presentation in the afternoon at the Indiana Medical History Museum's annual meeting to be held in conjunction with the Indiana State Medical Association's Annual Convention in Indianapolis. The afternoon lecture will be held at 3:30 p.m. in the Mount Ranier Room at the Indianapolis Hyatt Regency. For more information contact Katherine McDonell at the Indiana Medical History Museum (317/635-7329).*

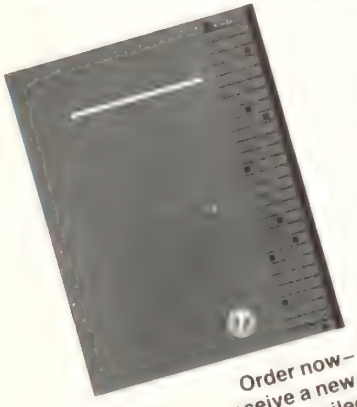
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The 1986-87 edition of the Indiana State Medical Association Membership Roster is now available. The roster is mailed automatically to all ISMA members.

Additional copies of the roster will be sold for $15.00 each for a physician member and $30.00 each for a non-member, payable in advance. Checks should be payable to the Indiana State Medical Association.

For more information or to order copies, write to the ISMA Membership Department, Attn: Rosanna Iler, 3935 N. Meridian St., Indianapolis, Ind. 46208.

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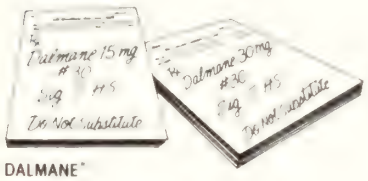
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References: **1.** Kales J, *et al Clin Pharmacol Ther 12* 691-697, Jul-Aug 1971 **2.** Kales A, *et al Clin Pharmacol Ther 18* 356-363, Sep 1975 **3.** Kales A, *et al Clin Pharmacol Ther 19* 576-583, May 1976 **4.** Kales A, *et al Clin Pharmacol Ther 32* 781-788, Dec 1982 **5.** Frost JD Jr, DeLucchi MR *J Am Geriatr Soc 27* 541-546, Dec 1979 **6.** Dement WC, *et al Behav Med*, pp 25-31, Oct 1978 **7.** Kales A, Kales JD. *J Clin Psychopharmacol 3* 140-150, Apr 1983 **8.** Tennant FS, *et al* Symposium on the Treatment of Sleep Disorders, Teleconference, Oct 16, 1984 **9.** Greenblatt DJ, Allen MD, Shader RI *Clin Pharmacol Ther 21* 355-361, Mar 1977



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Precautions: In elderly and debilitated patients, it is recommended that the dosage be limited to 15 mg to reduce risk of oversedation, dizziness, confusion and/or ataxia. Consider potential additive effects with other hypnotics or CNS depressants. Employ usual precautions in severely depressed patients, or in those with latent depression or suicidal tendencies, or in those with impaired renal or hepatic function.

Adverse Reactions: Dizziness, drowsiness, lightheadedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported: headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehension, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been rare occurrences of leukopenia, granulocytopenia, sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations, and elevated SGOT, SGPT, total and direct bilirubins, and alkaline phosphatase, and paradoxical reactions, *e.g.*, excitement, stimulation and hyperactivity.

Dosage: Individualize for maximum beneficial effect. *Adults*: 30 mg usual dosage, 15 mg may suffice in some patients. *Elderly or debilitated patients*: 15 mg recommended initially until response is determined.

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NOVEMBER 1986 VOL. 79 NO. 11

INDIANA MEDICINE

The Journal of the Indiana State Medical Association

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INDIANA MEDICINE

Vol. 79, No. 11
NOVEMBER 1986

Devoted to the interests of the medical profession and public health in Indiana since 1908.

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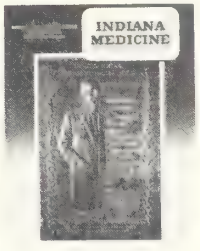
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ABOUT THE COVER

Featured is a photographic reproduction of John Stough Bobbs' life-size bronze in bas-relief, sculpted in 1916. It is now located at the St. Clair Street Indianapolis Public Library but will ultimately be moved to the I.U. School of Medicine. The bas-relief was done by Gutzon Borglum, who later gained international recognition for his colossal work of carving four presidents from Mount Rushmore in South Dakota. For more about Dr. Bobbs, see Medical Museum Notes.

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MEDICAL MUSEUM NOTES

CHARLES A. BONSETT, M.D., Indianapolis



THE ILLUSTRATION on this page shows the Mt. Rushmore National Memorial in South Dakota, the creation of the noted American sculptor, Gutzon Borglum. John Gutzon Borglum, the son of a wood-carving family doctor, was born on Idaho's southern border March 25, 1867, just three years before the death of Indiana's Dr. John Stough Bobbs (May 1, 1870).

The front cover of this issue of INDIANA MEDICINE shows the life-size bas-relief bronze memorial of Dr. Bobbs, done by Gutzon Borglum in 1916 and dedicated on the afternoon of October 11, 1917 at the new St. Claire Street Indianapolis Public Library.

"The ceremonies were held in the medical section of the library at the east end of the main corridor where the tablet was put in place. Associates and followers of Dr. Bobbs in the old Indiana Medical College who contributed to buy the tablet participated in the exercises which were largely attended.

"The tablet, aside from its silent tribute of appreciation to Dr. Bobbs, is expected by its sponsors to be a source of pride to Indianapolis residents because it is the work of Gutzon Borglum, among the foremost sculptors of the day, who now is engaged in carving a whole army into a mountain side near Atlanta, Ga."

A committee consisting of Dr. Henry Jameson, Dr. A.W. Brayton, Dr. W.N. Wishard, Dr. John H. Oliver and Dr. Frank B. Wynn had been appointed earlier to achieve a lasting memorial to Dr. Bobbs, a goal that was earnestly desired by Bobbs' contemporaries whose ranks by this late date were considerably thinned.

Dr. Bobbs was regarded by his contemporaries as a physician's physician. He was held in high esteem for his character as well as for his surgical ability. He performed the world's first gall bladder surgery (in 1867) and was the principal organizer of the oldest proprietary school to be incorporated into the I.U. School of Medicine. Dr. Bobbs left a sum of money to establish a clinic for the community's poor, and he left to the school his own medical library and a sum of $5,000 for its further development. This evolved into one of the finest medical libraries in the Midwest; unfortunately, it was destroyed by fire November 3, 1894.

Over the years, the library had been located in a variety of sites, the first being on Delaware and Court Streets in Indianapolis, the original home of the Indiana Medical College. After the devastating fire, the library was redeveloped, largely through the efforts of Dr. Frank B. Wynn who solicited funds, books and collections of journals from physicians throughout the state. In due time, the valuable collection had been replaced.

Instead of locating the restored collection in the new medical school, erected in 1895 across from the State Capitol Building (and which would become the I.U. School of Medicine in 1908), the medical library was located a few blocks away in the public library building because this would make it more accessible to the city's physicians and to the students of both proprietary medical schools in Indianapolis.

A new city library was completed in 1916 and it was here that the medical collection was relocated. By this date Indiana University School of Medicine was in existence. The question arises then as to why the medical library was not transferred to the school and why the Bobbs memorial was also not placed in the school. The reasons for this are several.

The I.U. School of Medicine's library never developed significantly until the 1920s. Until then it could not compare in size or beauty to the St. Clair Street location. In addition, the older physicians responsible for the Bobbs memorial harbored considerable hostility toward the new school. The unification of three proprietary schools into a state-supported school, first with Purdue and later with Indiana University, had not been achieved without considerable friction and bruised feelings.

Over the years the medical collection at the St. Clair Street library has disappeared, and the Bobbs memorial is no longer visible to the visiting public because of numerous new bookshelves which now obstruct its view.

Through the generosity of the Indianapolis Public Library and the initiative of the I.U.S.M. graduation class of 1952, the Bobbs memorial and the I.U.S.M. Library will be united. The memorial will be removed from its present location to the new oncology building at I.U.M.C., construction of which is due to begin this fall. This will be the location of the medical library where the bronze memorial to Dr. Bobbs will be situated in an appropriately prominent place.

WHAT'S NEW?

News of what is new in the medical supply industry is composed of abstracts from news releases by book publishers and manufacturers of pharmaceuticals, clinical laboratory supplies, instruments and surgical appliances. Each item is published as news and does not neces sarily constitute an endorsement of a product or recommendation for its use by INDIANA MEDICINE or by the Indiana State Medical Association.

Hewlett-Packard announces a new transmitter. The HP Statcom (Model 78731A) transmits stat-lab results quickly and accurately from the laboratory to the bedside patient-monitor. It includes the HP Vectra personal computer as well as a software package that provides fast and easy transmission through HP's critical-care network, HP Care-Net.

Parke-Davis has introduced a natural fish oil supplement rich in omega-3 polyunsaturated fatty acids. PROMEGA has no odor, taste, cholesterol or artificial additives. It is dispensed in one-piece soft gelatin capsules. It consists of eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), natural ingredients of fish from cold northern waters. Efficacy of oil from cold water fish in lowering blood cholesterol levels was established by observing Greenland eskimos, Japanese fishermen and Dutch villagers who consume large quantities of these fish rich in omega-3 fatty acids.

Schering has introduced Gyne-Lotrimin 500, a one-dose, clotrimazole vaginal tablet for the treatment of vulvovaginal candidiasis. The tablet provides vaginal fungicidal concentrations of clotrimazole which last for two or three days after dosing. Side effects are minimal—about equal to those seen with the placebo in comparative studies.



"You're a salesman, eh? Promise you won't try to sell me anything if I cure your laryngitis?"

Noetic Systems will sell and deliver on a 24-hour delivery basis a new book, *The PMS Self Help Book*. It is written by Susan M. Lark, M.D. The firm believes that PMS cramps should be relieved as quickly as possible. They pledge to mail either a phone or mail order the next day and, if possible, the same day the order is received. The book is priced at $12.95 plus $15 for next day delivery or plus $5 for normal handling.

The American Hospital Association is introducing the AHA Lithotripter Utilization Model. It will assist hospitals that are considering the purchase of an Extracorporeal Shock Wave Lithotripter (ESWL) in projecting utilization data for the years 1986-1990.

Abbott Laboratories is introducing a new variety of erythromycin called *PCE*. The new variety consists of coated erythromycin particles in tablets. It was designed to obtain fast, consistent absorption of erythromycin while minimizing the potential for gastrointestinal side effects.

Doubleday & Company and the American Cancer Society announce the release of *The American Cancer Society Cancer Book*. It outlines prevention, detection, diagnosis, treatment, rehabilitation and cure. It is a definitive cancer reference from the world's leading authority, edited by Arthur I. Holleb, M.D., Senior Vice President for Medical Affairs of the Cancer Society. For complete information write to Doubleday & Company, 245 Park Ave., New York, N.Y. 10167.

Kodak has new software for Kodak Ektachem 700 analyzers. Among other items the change furnishes a bidirectional interface with the laboratory computer that can save more than 90% of the labor associated with programming the analyzer. Three new chemistries, magnesium, theophylline and CK-MB, have been added to the test menu of the analyzer.

Harbor House Import/Export can supply the LIFE-SAVER PILL BOX AND PERSONAL ALARM. The device is a multipurpose key chain, pill box and personal alarm. The alarm will summon help when needed. It is designed for the individual who depends on medication. The alarm operates on a 12 volt lighter battery and will continually send warning signals at 80 db. for 3½ hours. Personal medical card gives fast emergency instructions. Pills are stored in a separate dry proof compartment for easy accessibility. The device is lightweight and durable.

The Indiana Brace Company announces EHOB (elevate-head-of-bed), a system of nine air cushions which can be arranged in various combinations to accomplish comfortable and effective body positions for a variety of conditions. The three different sizes of the cushions make it possible to elevate any part of the body. The EHOB is Medicare and Medicaid approved.



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FUTURE FILE

Sleep Disorders

The Sleep Disorders Center at Winona Memorial hospital, Indianapolis, will sponsor its Second Annual Sleep Disorders Conference Jan. 16 at the hospital.

Peter Haury, Ph.D., Dartmouth, will be the featured speaker. An expert in psycho-physiology, he will also be speaking at the Indiana Psychiatric Society meeting Jan. 15.

For details, please call Karon Crowe, Medical Education, Winona Hospital—(317) 927-2042.

Family Practice Review

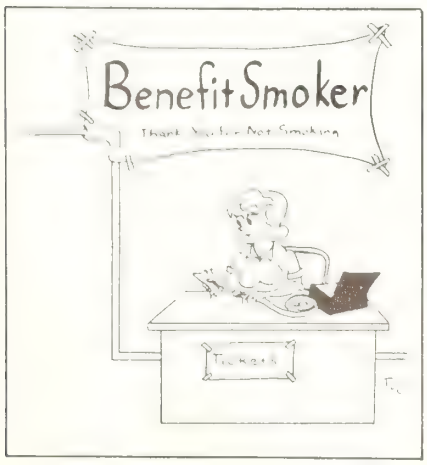
"Family Practice Review—a Comprehensive Update" will be the subject of a CME meeting at Omaha, Neb., April 27 to May 8. Another CME meeting on the same subject will be conducted from March 30 to April 10.

The registration fee for each meeting is $850. Contact Marge Adey, University of Nebraska Medical Center for CME, 42nd and Dewey Avenues, Omaha 68105—(402) 559-4152.

Management Seminars

"The Physician in Management Seminars I and II" will be conducted by the American Academy of Medical Directors at the Hyatt Islandia, San Diego, Calif., Jan. 12 to 16.

For information, contact Sherry Mason, AAMD, 4830 W. Kennedy Blvd., Suite 648, Tampa, Fla. 33609—(813) 873-2000.



The *Journal of the American Medical Association* publishes a list of CME courses for the United States twice yearly. The January listing features courses offered from March through August; the July listing features courses offered from September through February.

Health Care Leadership

The 1986 National Institute on Health Care Leadership and Management, a nine-course selection in advanced leadership training, meets Nov. 17 to 21 at the Marriott's Grand Hotel Resort, Point Clear, Ala. CME credits range from 14 to 28.

Call Sherry Mason at the American Academy of Medical Directors in Tampa, Fla., at 813-873-2000.

Critical Care Medicine

A Comprehensive Review Course in Critical Care Medicine will be conducted April 22 to 26 by the Center for Bio-Medical Communication, Bethesda, Md.

It is planned for physicians who must care for critically ill patients and those who specialize in critical care. The course carries 31 hours of Category 1 credit. The advance registration fee is $550, which includes tuition, all course materials and bibliography. The faculty will consist of specialty faculty members from the foremost teaching institutions.

Contact the Center at 491 Grand Ave., Englewood, N.J. 07361—(201) 568-9381.

Family Practice

The 11th Annual "Midwinter Family Practice" conference will be conducted by the University of Michigan Medical School Feb. 1-6 at the Hilton Shanty Creek, Bellaire, Mich. Category 1 and AAFP credits: 21.5 hours.

The correspondent is Gayle Fox, Office of CME, Towsley Center, Box 0201, Ann Arbor, Mich. 48109—(313) 763-1400.

Indiana University CME

Nov. 21: Care of the Sick Newborn, Hilton-at-the-Circle, Indianapolis.

Feb. 19: Update in Infectious Diseases, Reid Memorial Hospital, Richmond.

Feb. 21-22: Annual Meeting, Indiana Society of Anesthesiologists and Anesthesia Update, Radisson Hotel, Indianapolis.

For further information, contact Melody Dian, Assistant Director, CME, I.U. School of Medicine—(317) 274-8353.

AMA-HMSS Meeting

The AMA-Hospital Medical Staff Section Eighth Assembly Meeting is scheduled for Dec. 4 to 8 at the Las Vegas Hilton. The theme is "Legal Issues Affecting Medical Staffs."

Each hospital medical staff in the United States is encouraged to send a representative to the meeting.

Emergency Medicine

The Eighth Annual Mammoth Mountain Emergency Medicine Ski Conference will be conducted by Medical Conferences, Inc., March 8 to 13 at Mammoth Lakes, Calif.

The fee for physicians is $350, for physicians in training $250. Credits: 20 hours, AMA Category 1, and 20 elective hours, AAFP.

Contact Medical Conferences, P.O. Box 52-B, Newport Beach, Calif. 92662—(714) 650-4156.

Leukemia Symposium

The Leukemia Society of America will hold its Third National Medical Symposium at the Town and Country Hotel in San Diego, Calif., March 18 to 21.

The program is directed toward physicians, scientists, fellows in training, residents, oncology nurse specialists and allied specialists.

For details, contact the Leukemia Society at 733 Third Ave., New York, N.Y. 10017—(212) 573-8484.

Kansas CME Courses

The University of Kansas Medical Center sponsors the following CME courses:

"Legal Medicine: The New Solution" at Puerto Vallerta, Mexico—16 credits in Category I for AMA and AAFP. January 18 to 24.

"International Medicine Symposium" at Cancun, Mexico—18 credits in Category I for AMA and AAFP. March 1 to 7.

"37th Annual Anesthesiology Symposium" at Crown Center Hotel, Kansas City, Missouri—credits pending. April 24 to 26.

"Sam E. Roberts Nutrition" at University of Kansas Medical Center, Kansas City, Kansas—credits pending. March 31.

"Pediatrics" at University of Kansas Medical Center, Kansas City, Kansas—credits pending. April 2 to 3.

"Common Problems in Gastroenterology" at the University of Kansas Medical Center, Kansas City, Kansas—credits pending. March 16.

"Kansas Medicine" at University of Kansas Medical Center, Kansas City, Kansas—credits pending. May 15.

"Advanced Cardiac Life Support Provider Course" at University of Kansas Medical Center, Kansas City, Kansas—13.5 credits in Category I AMA and AAFP. January 28 and 29.

"What's New in Diabetes" at University of Kansas Medical Center, Kansas City, Kansas—credits pending. April 1.

The correspondent is Eileen Buttron, University of Kansas Medical Center, 39th and Rainbow Blvd., Kansas City, Kansas 66103—(913) 588-4494.

Johns Hopkins CME

The Johns Hopkins University School of Medicine offers the 28th Annual Postgraduate Institute for Pathologists in Clinical Cytopathology. This is designed as a Subspecialty Residency in Clinical Cytopathology, then highly compressed for the busy pathologist into 152 AMA Category 1 credit hours in two courses, both of which must be taken:

—February through April 1987, Home Study Course A is provided registrants for personal reading and microscopic study at their own laboratory in preparation for Course B; and

—April 27 to May 8, 1987, In-Residence Course B is an extremely concentrated lecture series, intensive laboratory studies, and vital clinical experience at the Johns Hopkins Medical Institutions in Baltimore.

Application and completed pre-registration is advised at the earliest date possible, to assure an opening. Completed pre-registration, however, must be accomplished before March 27, 1987, unless by special arrangement.

For details write John K. Frost, M.D., 604 Pathology Building, The Johns Hopkins Hospital, Baltimore, Md. 21205.

Methodist Hospital CME

Nov. 12: Lester Bibler, M.D., Annual F.P. Lectureship on "Practical Topics for the Care of the Elderly," Methodist Hospital Auditorium, Indianapolis.

Nov. 12-13: 5th Annual Pediatric Critical Care Symposium, Radisson Plaza Hotel, Indianapolis.

Nov. 19: Prolongation of Life: Ethical Dilemmas of Modern Medical Technology, Part II, 1982-1986. Co-sponsored by St. Vincent Hospital. Hyatt Regency, Indianapolis.

Nov. 21: The Ohio Valley Chapter, Society for Adolescent Medicine third annual meeting, Methodist Hospital Auditorium, Indianapolis.

Feb. 13-16: 3rd Annual M.H. Perinatology Symposium, Sugar Loaf Resort, Cedar, Mich.

Feb. 28-March 1: 3rd Annual Symposium on Extracorporeal Shock Wave Lithotripsy, Hilton-on-the-Circle, Indianapolis.

April 13-15: 7th Annual House Staff Alumni Meeting. "From Lasers to Lithotripsy: Recent Technological Breakthroughs in Surgery," Hotel Royal Plaza, Lake Buena Vista, Orlando, Fla.

For information, contact Dixie Estridge, CME coordinator, Graduate Medical Center, Methodist Hospital of Indiana—(317) 929-3733.

Medical Care Economics

"The New Economics of Medical Care: The Identifier Concept" is the subject of meetings to be held Nov. 19 and March 18 at the Warwick Hotel, New York City.

The tuition is $110. The meeting will address topics such as DRGs and Prospective Payment Systems, Managing Case-Mix, The Identifier Concept, Managing Health Care Costs, etc. It is designed for hospital administrators, chief executives and financial officers, hospital department heads, physicians and allied health professionals.

Contact Ann J. Boehme, Long Island Jewish Medical Center, New Hyde Park, N.Y. 11042—(718) 470-8650.

Pacific Institute CME

"Hawaii 87: Critical Issues in Primary Care" is the title of a CME course to be conducted March 9-13 at the Waiohai Hotel, Poipu Beach, Kauai, Hawaii. It is being co-sponsored by the Pacific Institute of Continuing Medical Education and the Hawaii Medical Association.

The course is accredited for 20 AMA Category 1 hours and 20 AAFP-prescribed hours.

For more information, write Valerie Murray, Pacific Institute of CME, P.O. Box 1059, Koloa, Kauai, Hawaii 96756.



"I may not be the perfect doctor, but you aren't the perfect patient either."

CANCER CORNER

WILLIAM M. DUGAN, JR., M.D.
Methodist Hospital Cancer Care Center, Indianapolis

Coping with Cancer is a resource book available free of charge to any health professional who works with cancer patients and their families. The book, which deals with the psychological and social aspects of cancer, provides practical guidance in responding to the needs of pediatric, adolescent, and adult cancer patients. To obtain a free copy write: Coping with Cancer, Office of Cancer Communications, National Cancer Institute, Building 31, Room 10A18, Bethesda, Md. 20205.

New Publications that are now available to both the public and professionals include: *The American Cancer Society Cancer Book*, edited by Arthur Holleb, American Cancer Society senior vice president for medical affairs. This is the first book to bear the ACS imprint. The 650-page volume includes information on prevention, detection, diagnosis, treatment, rehabilitation and cure by some of the world's leading experts in those fields and can be obtained by contacting your local ACS chapter. *The Safe Handling of Antineoplastics/Chemotherapeutics* is an educational packet for professionals that is available free from Germanfree Laboratories, Inc., 7435 N.W. 41st Street, Miami, Fla. 33166. *The Cancer Patient's Handbook: Everything You Need to Know About Today's Care and Treatment*, by Mary-Ellen Siegel. Walker and Co., 720 Fifth Ave., New York, N.Y. 10019, phone 212/265-3632.

The Oncology Nursing Certification Corporation (ONCC) has certified 1,382 oncology nurses. A total of 1,605 nurses took the first oncology nursing certification examination that was held last April. The test covered the general oncology nursing knowledge base of the professional nurse. The certification will be valid for a four-year period and will pend reexamination. The next ONCC test will be held May 6, 1987, in Denver, prior to the opening of the Oncology Nursing Society's 12th Annual Congress. Another test will be administered October 17, 1987, in San Francisco, Atlanta, Chicago, Boston and Houston. Information and applications are available from the ONCC office, 3111 Banksville Road, Pittsburgh, Pa. 15216—412/344-3899.

The Third Annual Meeting of the American Society of Clinical Hyperthermic Oncology will be held December 11-14. Sponsored by the American Society of Clinical Hyperthermic Oncology at Palm Springs. For information contact Haim I. Bicher, M.D., Director, Valley Cancer Institute, 14427 Chase Street, Suite 203, Panorama City, Calif. 91402—818/895-1379.

The Great American Smokeout, an upbeat, good natured effort to encourage smokers to give up cigarettes for 24 hours, will take place from midnight to midnight on Thursday, November 20. Sponsored by the American Cancer Society, the goal of the smokeout is to get at least one in every five smokers to give up cigarettes during this time period.

Smokeout 1985 set an all-time record for participation in the day-long event. More than 23 million of America's 54 million smokers tried to kick the habit for the day. To obtain material for the smokeout such as Help-Quit Kits, buttons, posters or for further information, contact your local American Cancer Society chapter.

Potential Blood Donors, whose blood initially tests positive for HTLV III (HIV) infection, but is negative by confirmatory testing, should be notified of their testing status, according to a panel of National Institutes of Health experts. Many centers currently enter names of those patients whose blood is repeatedly reactive, but negative, by Western blot into donor deferral lists. According to the panel it is common practice to allow such individuals to donate again, but to discard their blood without their knowledge. The panel concluded that this practice should not continue and the donors had a right to be advised of their status.

Autologous blood was agreed upon by the panel as being the safest form of transfusion therapy, and that blood centers should make this option available to qualified patients and inform patients and physicians of the advantages of this approach.

Cancer Nursing Practice—An Overview, presented by the Oncology Nursing Society (ONS), is available on videocassettes. Series I is Cancer Nursing Practice—An Overview; Series II is Cancer Prevention, Detection and Treatment; and Series III deals with Issues and Trends in Cancer Care—Major Cancers.

Prices for ONS members are $400 (VHS or BETA), $525 (3/4-inch) for each series and for non-members $600 (VHS or BETA), $725 (3/4-inch) for each series. For further information and a complete listing of each series write to: National Nursing Network, 250 West 49th Street, Suite 401, New York, N.Y. 10019, or call 212/586-1975.

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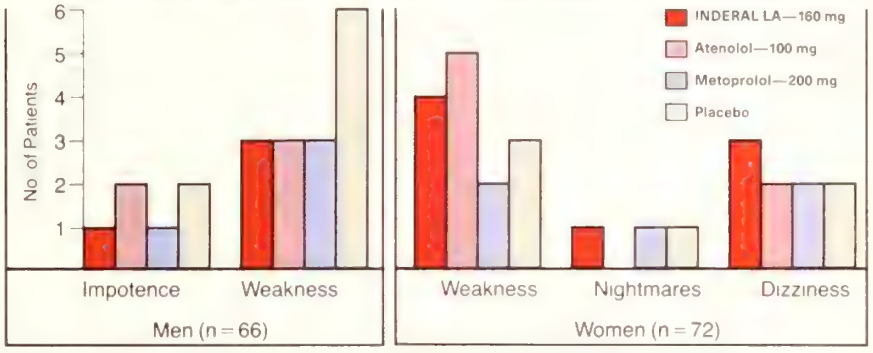
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(PROPRANOLOL HCl)



ONCE-DAILY LONG ACTING CAPSULES 80/50 120/50 160/50

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CONTRAINDICATIONS

Propranolol hydrochloride (INDERAL® LA): Propranolol is contraindicated in 1) cardiogenic shock, 2) sinus bradycardia and greater than first degree block, 3) bronchial asthma, 4) congestive heart failure (see WARNINGS) unless the failure is secondary to a tachyarrhythmia treatable with propranolol.

Hydrochlorothiazide: Hydrochlorothiazide is contraindicated in patients with anuria or hypersensitivity to this or other sulfonamide-derived drugs.

WARNINGS

Propranolol hydrochloride (INDERAL® LA): CARDIAC FAILURE. Sympathetic stimulation may be a vital component supporting circulatory function in patients with congestive heart failure, and its inhibition by beta blockade may precipitate more severe failure. Although beta blockers should be avoided in overt congestive heart failure, if necessary, they can be used with close follow-up in patients with a history of failure who are well compensated and are receiving digitalis and diuretics. Beta-adrenergic blocking agents do not abolish the inotropic action of digitalis on heart muscle.

IN PATIENTS WITHOUT A HISTORY OF HEART FAILURE, continued use of beta blockers can, in some cases, lead to cardiac failure. Therefore, at the first sign or symptom of heart failure, the patient should be digitalized and/or treated with diuretics, and the response observed closely. If propranolol should be discontinued (gradually if possible).

IN PATIENTS WITH ANGINA PECTORIS, there have been reports of exacerbation of angina and, in some cases, myocardial infarction following *abrupt* discontinuance of propranolol therapy. Therefore, when discontinuance of propranolol is planned, the dosage should be gradually reduced and the patient carefully monitored. In addition, when propranolol is prescribed for angina pectoris, the patient should be cautioned against interruption or cessation of therapy without the physician's advice. If propranolol therapy is interrupted and exacerbation of angina occurs, it usually is advisable to reinstitute propranolol therapy and take other measures appropriate for the management of unstable angina pectoris. Since coronary artery disease may be unrecognized, it may be prudent to follow the above advice in patients considered at risk of having occult atherosclerotic heart disease who are given propranolol for other indications.

THYROTOXICOSIS. Beta blockade may mask certain clinical signs of hyperthyroidism. Therefore, abrupt withdrawal of propranolol may be followed by an exacerbation of symptoms of hyperthyroidism, including thyroid storm. Propranolol does not distort thyroid function tests.

IN PATIENTS WITH WOLFF-PARKINSON-WHITE SYNDROME, several cases have been reported in which, after propranolol, the tachycardia was replaced by a severe bradycardia requiring a demand pacemaker. In one case this resulted after an initial dose of 5 mg propranolol.

MAJOR SURGERY. The necessity or desirability of withdrawal of beta-blocking therapy prior to major surgery is controversial. It should be noted, however, that the impaired ability of the heart to respond to reflex adrenergic stimuli may augment the risks of general anesthesia and surgical procedures.

Nonallergic Bronchospasm (eg, chronic bronchitis, emphysema)— PATIENTS WITH BRONCHOSPASTIC DISEASES SHOULD, IN GENERAL, NOT RECEIVE BETA BLOCKERS. INDERAL should be administered with caution, since it may block bronchodilation produced by endogenous and exogenous catecholamine stimulation of beta receptors.

DIABETES AND HYPOGLYCEMIA. Beta-adrenergic blockade may prevent the appearance of certain premonitory signs and symptoms (pulse rate and pressure changes) of acute hypoglycemia in labile insulin-dependent diabetes. In these patients, it may be more difficult to adjust the dosage of insulin. Hypoglycemic attacks may be accompanied by a precipitous elevation of blood pressure.

Hydrochlorothiazide: Thiazides should be used with caution in severe renal disease. In patients with renal disease, thiazides may precipitate azotemia. In patients with impaired renal function, cumulative effects of the drug may develop.

Thiazides should also be used with caution in patients with impaired hepatic function or progressive liver disease, since minor alterations of fluid and electrolyte balance may precipitate hepatic coma.

Thiazides may add to or potentiate the action of other antihypertensive drugs. Potentiation occurs with ganglionic or peripheral adrenergic-blocking drugs.

Sensitivity reactions may occur in patients with a history of allergy or bronchial asthma.

The possibility of exacerbation or activation of systemic lupus erythematosus has been reported.

PRECAUTIONS

Propranolol hydrochloride (INDERAL® LA): GENERAL. Propranolol should be used with caution in patients with impaired hepatic or renal function. Propranolol is not indicated for the treatment of hypertensive emergencies.

Beta-adrenoreceptor blockade can cause reduction of intraocular pressure. Patients should be told that propranolol may interfere with the glaucoma screening test. Withdrawal may lead to a return of increased intraocular pressure.

CLINICAL LABORATORY TESTS. Elevated blood urea levels in patients with severe heart disease; elevated serum transaminase, alkaline phosphatase, lactate dehydrogenase.

DRUG INTERACTIONS. Patients receiving catecholamine-depleting drugs, such as reserpine, should be closely observed if propranolol is administered. The added catecholamine-blocking action may produce an excessive reduction of resting sympathetic nervous activity, which may result in hypotension, marked bradycardia, vertigo, syncopal attacks, or orthostatic hypotension.

CARCINOGENESIS, MUTAGENESIS, IMPAIRMENT OF FERTILITY. Long-term studies in animals have been conducted to evaluate toxic effects and carcinogenic potential. In 18-month studies, in both rats and mice, employing doses up to 150 mg/kg/day, there was no evidence of significant drug-induced toxicity. There were no drug-related tumorigenic effects at any of the dosage levels. Reproductive studies in animals did not show any impairment of fertility that was attributable to the drug.

PREGNANCY. Pregnancy Category C. Propranolol has been shown to be embryotoxic in animal studies at doses about 10 times greater than the maximal recommended human dose. There are no adequate and well-controlled studies in pregnant women. Propranolol should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

NURSING MOTHERS. Propranolol is excreted in human milk. Caution should be exercised when propranolol is administered to a nursing mother.

PEDIATRIC USE. Safety and effectiveness in children have not been established.

Hydrochlorothiazide: GENERAL. Periodic determination of serum electrolytes to detect possible electrolyte imbalance should be performed at appropriate intervals.

All patients receiving thiazide therapy should be observed for clinical signs of fluid or electrolyte imbalance, namely: Hyponatremia, hypochloremic alkalosis, and hypokalemia. Serum and urine electrolyte determinations are particularly important when the patient is vomiting excessively or receiving parenteral fluids. Medication such as digitalis may also influence serum electrolytes. Warning signs irrespective of cause are: Dryness of mouth, thirst, weakness, lethargy, drowsiness, restlessness, muscle pains or cramps, muscular fatigue, hypotension, oliguria, tachycardia, and gastrointestinal disturbances such as nausea and vomiting.

Hypokalemia may develop, especially with brisk diuresis, when severe cirrhosis is present, or during concomitant use of corticosteroids or ACTH.

Interference with adequate oral electrolyte intake will also contribute to hypokalemia. Hypokalemia can sensitize or exaggerate the response of the heart to the toxic effect of digitalis (eg, increased ventricular irritability). Hypokalemia may be avoided or treated by use of potassium supplements, such as foods with a high potassium content.

Any chloride deficit is generally mild and usually does not require specific treatment, except under extraordinary circumstances (as in liver or renal disease). Dilutional hyponatremia may occur in edematous patients in hot weather; appropriate therapy is water restriction, rather than administration of salt, except in rare instances when the hyponatremia is life-threatening. In actual salt depletion, appropriate replacement is the therapy [illegible]

Hyperuricemia may occur or frank gout may be precipitated in certain patients receiving thiazide therapy.

Insulin requirements in diabetic patients may be increased, decreased, or unchanged. Diabetes mellitus which has been latent may become manifest during thiazide administration.

If progressive renal impairment becomes evident, consider withholding or discontinuing diuretic therapy.

Thiazides may decrease serum PBI levels without signs of thyroid disturbance.

Calcium excretion is decreased by thiazides. Pathologic changes in the parathyroid gland with hypercalcemia and hypophosphatemia have been observed in a few patients on prolonged thiazide therapy. The common complications of hyperparathyroidism, such as renal lithiasis, bone resorption, and peptic ulceration, have not been seen. Thiazides should be discontinued before carrying out tests for parathyroid function.

DRUG INTERACTIONS. Thiazide drugs may increase the responsiveness to tubocurarine.

The antihypertensive effects of thiazides may be enhanced in the postsympathectomy patient. Thiazides may decrease arterial responsiveness to norepinephrine. This diminution is not sufficient to preclude effectiveness of the pressor agent for therapeutic use.

PREGNANCY. Pregnancy Category C. Thiazides cross the placental barrier and appear in cord blood. The use of thiazides in pregnancy requires that the anticipated benefit be weighed against possible hazards to the fetus. These hazards include fetal or neonatal jaundice, thrombocytopenia, and possibly other adverse reactions which have occurred in the adult.

NURSING MOTHERS. Thiazides appear in human milk. If use of the drug is deemed essential, the patient should stop nursing.

PEDIATRIC USE. Safety and effectiveness in children have not been established.

ADVERSE REACTIONS

Propranolol hydrochloride (INDERAL® LA): Most adverse effects have been mild and transient and have rarely required the withdrawal of therapy.

Cardiovascular. Bradycardia, congestive heart failure, intensification of AV block, hypotension, paresthesia of hands, thrombocytopenic purpura; arterial insufficiency, usually of the Raynaud type.

Central Nervous System. Lightheadedness, mental depression manifested by insomnia, lassitude, weakness, fatigue, reversible mental depression progressing to catatonia; visual disturbances, hallucinations, an acute reversible syndrome characterized by disorientation for time and place, short-term memory loss, emotional lability, slightly clouded sensorium, and decreased performance on neuropsychometrics.

Gastrointestinal. Nausea, vomiting, epigastric distress, abdominal cramping, diarrhea, constipation, mesenteric arterial thrombosis, ischemic colitis.

Allergic. Pharyngitis and agranulocytosis, erythematous rash, fever combined with aching and sore throat, laryngospasm and respiratory distress.

Respiratory. Bronchospasm.

Hematologic. Agranulocytosis, nonthrombocytopenic purpura, thrombocytopenic purpura.

Auto-Immune. In extremely rare instances, systemic lupus erythematosus has been reported.

Miscellaneous. Alopecia; LE-like reactions, psoriasiform rashes, dry eyes, male impotence, and Peyronie's disease have been reported rarely. Oculomucocutaneous reactions involving the skin, serous membranes, and conjunctivae reported for a beta blocker (practolol) have not been associated with propranolol.

Hydrochlorothiazide:

Gastrointestinal. Anorexia, gastric irritation, nausea, vomiting, cramping, diarrhea, constipation, jaundice (intrahepatic cholestatic jaundice), pancreatitis, sialadenitis.

Central Nervous System. Dizziness, vertigo, paresthesias, headache, xanthopsia.

Hematologic. Leukopenia, agranulocytosis, thrombocytopenia, aplastic anemia.

Cardiovascular. Orthostatic hypotension (may be aggravated by alcohol, barbiturates, or narcotics).

Hypersensitivity. Purpura, photosensitivity, rash, urticaria, necrotizing angiitis (vasculitis, cutaneous vasculitis), fever, respiratory distress, including pneumonitis, anaphylactic reactions.

Other. Hyperglycemia, glycosuria, hyperuricemia, muscle spasm, weakness, restlessness, transient blurred vision.

Whenever adverse reactions are moderate or severe, thiazide dosage should be reduced or therapy withdrawn.

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REFERENCE:

1. Ravid M, Lang R, Jutrin I. The relative antihypertensive potency of propranolol, oxprenolol, atenolol, and metoprolol given once daily. *Arch Intern Med* 1985;145:1321-1323.

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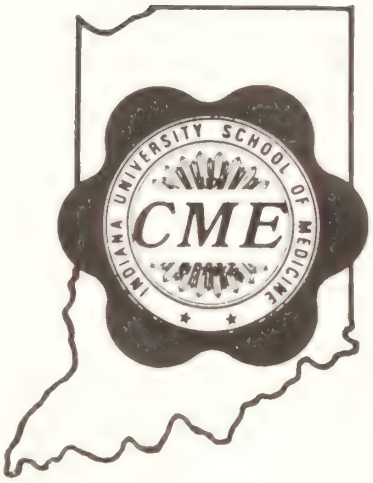
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To obtain Category 1 credit for this month's article, complete the quiz on page 1019.



MENIERE'S DISEASE

RICHARD T. MIYAMOTO, M.D.
Indianapolis

MENIERE'S DISEASE is an inner ear disease characterized by idiopathic sensorineural hearing loss, episodic vertigo and tinnitus. A fourth symptom, aural fullness, is often present. This disease was first described by Prosper Meniere in 1861.[1] Not until 1938 was the histopathologic correlate described. Hallpike and Cairns[2] in England and Yamakawa[3] in Japan independently reported hydropic distention of the endolymphatic system. Enlargement of the endolymphatic space contained within the membranous labyrinth occurs as a result of a combination of overproduction and underresorption of endolymph.

Although children are occasionally affected,[4] Meniere's disease usually begins between the ages of 20 and 60 years. It has been estimated that there are 2.4 million people in the United States with this disease. The disease is usually unilateral but 20 to 30% of patients eventually develop symptoms in the second ear. The incidence of bilaterality increases with the duration of symptoms. Morrison[5] reported that Meniere's disease was bilateral in 13% of patients two years after original diagnosis, in 25% at five years, in 35% at 10 years and in 40% at 15 years.

Etiology

A wide variety of factors have been incriminated in the production of endolymphatic hydrops, yet the etiology remains uncertain in most cases. Endolymphatic hydrops can result from congenital[6] and acquired causes. Acquired causes include infectious, traumatic, allergic, immunologic and degenerative factors. The term Meniere's disease is reserved for idiopathic endolymphatic hydrops. Proposed underlying causes include inner ear enzyme dysfunction,[7] anomalies of the vestibular aqueduct (bony canal through which the endolymphatic duct passes),[8] carbohydrate metabolic dysfunction,[9] and alterations in mem-

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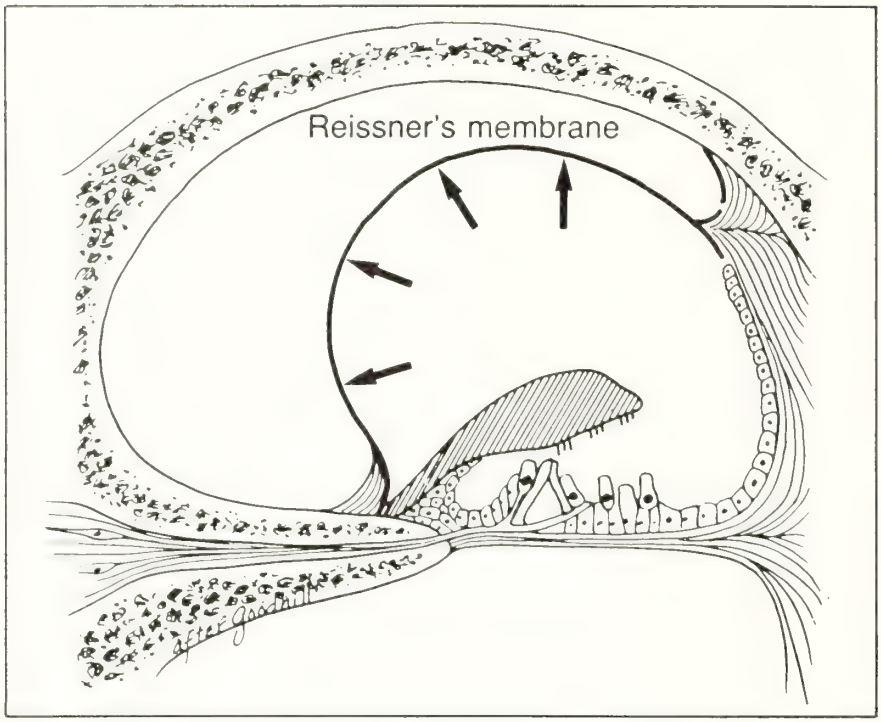


FIGURE 1: Diagramatic representation of endolympathic hydrops displacing Reissner's membrane of scala media of cochlea in Meniere's disease. (Modified by permission from Hughes GB, Textbook of Clinical Otology, Thieme-Stratton, Inc, New York, 1986)

brane permeability[10] with dysfunction of fluid-solute regulation,[11] among others.

Clinical Manifestations

Meniere's disease is capricious in its clinical behavior. Unpredictable remissions and exacerbations are characteristic.

Vertigo—Vertigo is the most disabling symptom to the patient and is the one for which medical attention is usually sought. The definitive spells begin suddenly with a severe whirling sensation accompanied by pallor, diaphoresis, nausea and frequently vomiting. The attacks may last from 20 minutes to several hours. Frequently, the spells are preceded by an aura consisting of tinnitus and/or aural fullness or stuffiness. Even the slightest head motion accentuates the symptoms. Vision may be blurred due to associated nystagmus but the patient is completely oriented to his environment and has no associated neurologic deficits such as loss of consciousness, weakness or paralysis, parathesia, or dysarthria.

If Meniere's disease remains active over a prolonged period of time, function of more and more of the membranous labyrinth is destroyed and the severity of the spells may decrease. Rarely, the attacks may be of such explosive onset and severity that the patient may fall violently to the ground. These drop attacks have no preceding aura and there is no loss of consciousness. They have been termed "utricular crises" or "falling spells of Tumarkin."

Hearing Loss—In the early stages of classical Meniere's disease, hearing loss is usually fluctuant in nature. Because of fluctuation of hearing, the initial audiogram may be entirely normal. As the hearing loss progresses, a persistent sensorineural hearing loss develops. The hearing loss is usually low frequency, but occasionally a flat or high frequency loss is seen. In the final stages of the disease, the inner ear may "burn out" and the hearing will cease to fluctuate. A profound sensorineural loss may occur, but rarely is total anacousis seen.

The decrease in auditory acuity is typical of a cochlear type of sensorineural hearing loss. Sounds are distorted in the affected ear and may be perceived as being tinny. The same sound frequently elicits a different pitch perception in the two ears (diplacusis binauralis dysharmonica). The pitch is usually higher in the affected ear. Loud sounds are intolerable or even painful due to recruitment (abnormal growth of loudness) in the involved ear. During a spell, hearing acuity is always decreased and may remain so afterwards, although dramatic improvement may occur after the spell passes. This paradoxical improvement in hearing following a Meniere's attack has been referred to as Lermoyez's syndrome.

Tinnitus—Tinnitus is often described as a low-pitched roaring sensation, but is highly variable. Usually, the tinnitus tends to be related to the region of most severe hearing loss, i.e., low frequency tinnitus is associated with low frequency hearing loss.

Fullness and Pressure—Most patients complain of aural fullness and pressure. These sensations, which may be described as a "plunger effect," often increase before a definitive spell.

Functional Tests

Vestibular Tests—It is unusual to be able to examine a patient during an acute attack, but were this possible, labyrinthine nystagmus would be noted. Electronystagmography may be used to record nystagmus, and hypoactivity of the involved labyrinth may be documented, although this measurement often is normal, especially early in the disease.

Auditory Tests—Pure tone testing usually demonstrates a low-tone sensorineural hearing loss early in the disease course. Later, a flat- or high-

tone sensorineural loss may be seen. Serial audiograms may document a fluctuant hearing loss.[12] In at least half of Meniere's disease patients, a temporary improvement in hearing thresholds and discrimination ability can be effected by administering diuretics. This positive diuretic effect is seen principally in the early stages of the disease.

Differential Diagnosis

Meniere's disease must be differentiated from a number of other conditions that may simulate it. The following is a partial listing of the more common diseases to be considered.

1. **Acoustic Neuroma**[13]—This uncommon tumor causes a progressive unilateral sensorineural hearing loss, tinnitus and dysequilibrium. (Acute vertigo is uncommon because the tumor slowly destroys vestibular function, allowing vestibular compensation to occur as the tumor progresses.) An audiogram will demonstrate a sensorineural hearing loss with a disproportionately poor speech discrimination score. A decreased or absent vestibular caloric response is typical. Auditory brainstem-evoked response testing demonstrates absent or delayed responses and is the most effective screening test. The diagnosis is established by CT scan. A contrast enhancing mass emanating from the internal auditory canal is characteristic. Small tumors 1cm or less may not be visualized by the current generation of CT scanners and can be identified by air CT cisternography or magnetic resonance imaging (MRI).

2. **Vestibular Neuronitis**—This condition is characterized by the sudden onset of severe vertigo, which subsides over several days. Auditory symptoms are absent and the audiogram is normal. Caloric tests demonstrate an absent or reduced vestibular response. Temporal bone x-rays are normal.

3. **Benign Positional Vertigo**—In this condition, transient vertigo occurs when the patient assumes a certain head position (usually with the involved ear down). Audiometric and vestibular tests are normal. This is usually a self-limiting condition that resolves in weeks or months.

4. **Vascular Disorders**—Brainstem ischemia may result in hypoxia of the vestibular nuclei, resulting in acute vertigo. The dizziness is usually accompanied by other symptoms, such as blurring of vision, diplopia, dysphagia, dysmetria or ataxia.

5. **Hypoglycemia**—Dizziness is commonly associated with hypoglycemia. The diagnosis is established by a five-hour glucose tolerance test. An abnormally low glucose level is noted, usually at the three-, four-, or five-hour interval.

6. **Hypothyroidism**—Episodes of vertigo and hearing loss may occur in patients with hypothyroidism. These patients usually are clinically hypothyroid.

7. **Congenital or Acquired Syphilis**—Hydrops and osteitis of the otitic capsule can occur secondary to syphilis[14] and produce a clinical picture very similar to Meniere's disease. The diagnosis is confirmed by serologic tests such as the VDRL and FTA-ABS.

8. **Hyperlipoproteinemia**—Hearing loss and vestibular dysfunction can be produced by a hyperlipemic or hyperlipoproteinemic state.[15]

9. **Cervical Disorders**—A primary neck disorder can disturb the vertebrobasilar artery circulation or alter the cervical neck muscle reflex pathways and produce dizziness. A history of "whiplash" is often elicited.

Medical Treatment

The two mainstays of medical treatment of Meniere's disease are a low salt diet[16] and diuretics. Patients are asked to avoid excessively salty foods, and not to add table salt to foods when they are being prepared or once they have been placed on the table. These measures are taken in an effort to decrease the endolymphatic hydrops.

Various vestibular suppressants, antiemetics and sedatives have been effectively used for the alleviation of the acute vestibular symptoms. Studies by McCabe, *et al.*[17] have demonstrated that diazepam is most effective in

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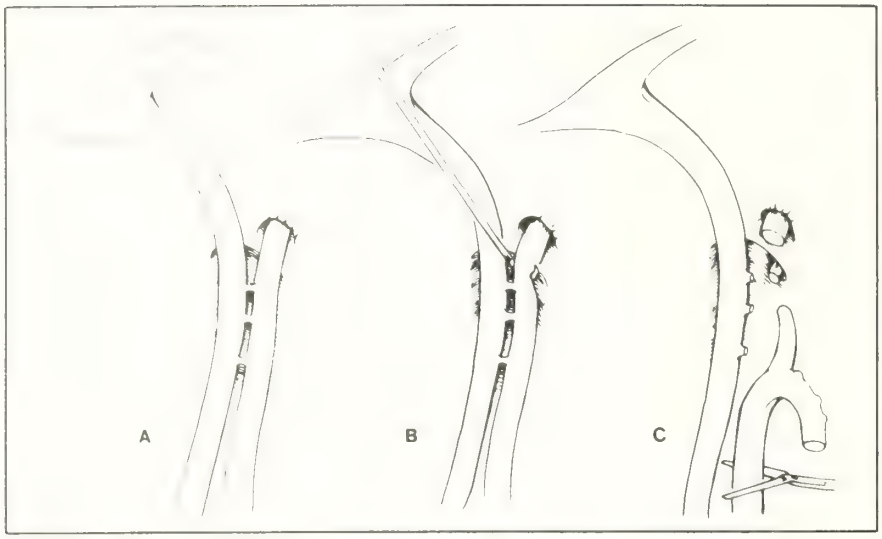


FIGURE 2: Vestibular neurectomy as performed through the middle cranial fossa approach. (From Miyamoto RT, *et al*: Otolaryngol Head Neck Surg, 93:529-535, 1985).

reducing vestibular activity. When the attacks are frequent, daily maintenance diazepam therapy is important in preventing recurring vertigo. The medication should be given regularly rather than on a p.r.n. basis. Anticholinergics are helpful in controlling inner ear vegetative symptoms of nausea and vomiting.

Approximately 80% of patients can be expected to reach tolerable symptom levels by titrating their medication dosage[18] and will not require surgical management.

In the unusual case of bilateral end-stage Meniere's disease, in which there is persistent disabling vertigo, ototoxic vestibular ablation can be offered instead of surgery.[19-20] Intramuscular streptomycin 2g daily is given over a period of two weeks. Vestibular responses are monitored with ice water caloric testing. When no vestibular response can be elicited, the streptomycin is discontinued. An adequate margin of safety is present so as to subject the auditory system to minimal risk of ototoxicity.

Surgical Treatment

When medical therapy fails to control Meniere's disease and the symptoms are incapacitating, surgical management is employed. The trend in surgical management of Meniere's disease is toward intervention earlier in the course of the disease in an effort to arrest irreversible labyrinthine damage. The surgical procedures utilized can be separated into those that attempt to preserve cochlear function and those that do not. The procedures currently employed at the Indiana University Medical Center include the endolymphatic shunt or vestibular nerve section by either the middle fossa or retrolabyrinthine approach, when hearing preservation is feasible, and the transmastoid labyrinthectomy, when useful hearing is absent.

Endolymphatic sac surgery was first introduced by Georges Portmann[22] in 1927. He described decompression of the endolymphatic sac in an effort to increase the resorptive function of this structure to relieve the excess endolymph pressure that precipitates the spells of Meniere's disease. The endolymphatic sac extends from the vestibule of the inner ear and fans out in the posterior fossa dura. It is readily approached through a standard mastoidectomy approach. Later modifications of this procedure include the addition of various shunts from the sac into the subarachnoid space[23] or mastoid.[24]

The endolymphatic mastoid shunt has been further refined by adding a unidirectional valve in an effort to reestablish the normal fluid-fluid hydraulic interface of the endolymphatic system.[25] However, Graham, *et al.*[26] attained comparable results by simple wide decompression of the endolymphatic sac as compared to the later technical refinements. The complication rate of endolymphatic sac surgery is very low but relief from the definitive vertigo spells is less than optimal, ranging from 60 to 70% success. Yet, endolymphatic sac surgery is usually employed as a first approach, because it is the most conservative of the surgical procedures available.

When vertigo is not controlled by an endolymphatic sac procedure and hearing remains useful, vestibular nerve section is employed. This neurotologic procedure is accomplished through either a middle cranial fossa[27] or a retrolabyrinthine approach.[28] Selective vestibular nerve section is accomplished with preservation of the cochlear nerve. Vertigo control can be expected to approach a 90 to 95% success rate.

When hearing is not useful and vertigo is incapacitating, transmastoid labyrinthectomy is employed. The semicircular canals and the utricle and saccule in the vestibule of the inner ear are surgically ablated, removing each of the five areas of neuroepithelium. Vertigo control will approach 97%, but any residual hearing will be lost.[29-30]

Vestibular neurectomy and transmastoid labyrinthectomy can be effectively employed for any peripheral labyrinthine dysfunction.

Summary

Although capricious in its clinical behavior, exhibiting spontaneous remissions and exacerbations, Meniere's disease is amenable to treatment. A therapeutic continuum is employed, which allows symptomatic control in the majority of patients.

When medical treatment fails, a variety of neurotologic surgical procedures including the endolymphatic shunt, vestibular nerve section, by either the middle fossa or retrolabyrinthine approaches or transmastoid labyrinthinectomy, are currently employed at the Indiana University Medical Center.

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Medical Management of the Brain Dead Patient in Preparation for Organ Donation



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REGIS G. LAGLER, M.D.[2]
MICHAEL JASTREMSKI, M.D.[3]

ONCE THE THREE important decisions have been made that the patient is brain dead, will become an organ donor, and specific organ(s) have been accepted for removal by the transplant team, treatment priorities for that patient often need to change so as to optimize function of the donor organs.

The physiologic derangements and clinical challenges encountered in caring for the brain dead organ donor are substantial, time consuming, and require careful attention to detail.[1] The physician must decide early to either accept those challenges or transfer the patient to an organ procurement center. The major medical management issues are listed in *Table 1* and will briefly be discussed here.

Preservation of Donor Organ Function—All therapy is directed toward assuring adequate oxygen and nutrient delivery to donor organs and minimizing complications (e.g., cardiac arrest, dehydration) evolving from the brain dead condition of the patient. When multiple organs are to be donated, the effect and selection of therapy must be balanced to support all such organs. For example, fluid loading may benefit donor kidneys but harm donor lungs, a pulmonary artery line may assist in fluid management but harm a donor heart, etc. Coordination among all members of the transplant team and between the team and those physicians and nurses providing direct patient care is essential to establish such treatment priorities.

Cardiac Arrest and Cardiovascular Support—The donor patient has lost important neurologic influences upon heart function. Early data[1] indicated a high incidence of hypotension and arrhythmias and that all brain dead patients experienced a spontaneous cardiac arrest, usually within 48 hours of the cessation of brain function. However, with careful attention, most patients can be stabilized for longer periods, but unexpected bradycardia and asystole do occur in some patients. Standard protocols for CPR are appropriate except for atropine, which has no effect due to its mediation through the vagus nerve. As a matter of policy it should be decided whether CPR should be initiated in these patients and/or for how long it should be continued before organ viability will be jeopardized.

A variety of factors (e.g., prior therapeutic dehydration or ongoing fluid loss due to diabetes insipidus) make it likely that hypovolemia may be present. Therefore, volume deficits must be corrected before vasoactive drugs are initiated. Agents such as norepinephrine,

TABLE 1
Medical Management Issues

1) Preservation of donor organ function
2) Cardiac arrest and cardiovascular support
3) Respiratory care
4) Polyuria
5) Hypopituitarism
6) Poikilothermia
7) Family support

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dopamine, etc. may also be harmful in producing vasoconstriction and a reduction in blood flow to donor organs. Fluid selection for volume loading is dictated by many ongoing issues related to fluid and electrolyte therapy, polyuria as discussed below, or other treatment objectives such as avoiding antigenic challenge from blood products. Careful hemodynamic monitoring is important but may be modified. Placement of an arterial catheter should be coordinated with the transplant team because some surgeons prefer that arterial lines be in the upper extremity to assist with sequential organ removal. Endocardial lesions secondary to pulmonary artery catheters have also been reported[3] so that their use should be minimized and coordinated with the cardiac surgeon if the heart is to be donated.

Respiratory Care—The usual principles and practices of respiratory care continue to apply in these patients. The benefits from use of PEEP, however, must be balanced against its potential to decrease cardiac output and/or selectively decrease splanchnic and hepatic blood flow.[4,5] Pulmonary oxygen toxicity is of potential concern in the lung donor and the FIO2 should be maintained at less than 0.6. The ventilators should also be readjusted to normalize arterial pH so as to avoid the possible cardiac and other complications of alkalemia. Positioning of the endotracheal tube should also be coordinated with the transplant surgeons if the lungs are to be utilized so as minimize mucosal injury in the trachea where suture lines will occur.

Polyuria—Polyuria is frequently caused in the donor patient by one or more of the factors listed in *Table 2*. Since a combination of factors usually is involved, titration of urine output and free-water clearance against serum electrolytes, blood sugar and IV infusions is necessary. An imbalance of these parameters will lead to hypovolemia, hyperosmolality, hypokalemia, and hypernatremia, all potentially harmful to donor organs. Hyperglycemia frequently occurs due to the stress of the injury or illness, use of intravenous dextrose, and the common use of steroids. This elevated blood sugar may induce a vigorous osmotic diuresis, as may mannitol when used for intracranial pressure control.

TABLE 2
Causes of Polyuria

1) Physiologic diuresis
2) Osmotic diuresis (mannitol, glucose)
3) Diuresis due to hypothermia
4) Partial or complete diabetes insipidus
5) Other diuretics
6) Combinations of the above

Urinary sodium and osmolality measurements are useful to distinguish a vasopressin-deficiency polyuria from an osmotic diuresis. If the urine sodium and osmolality are very low, diabetes insipidus is likely to be predominant. Evolving hypernatremia, for practical purposes, is also sufficient evidence of some vasopressin deficiency. Treatment of diabetes insipidus usually combines administration of free water and aqueous vasopressin either by bolus (up to 10 units IV or subcutaneously per hour) or by infusion.[6] Both therapies are balanced against urine output (goal of less than 200 cc/hr) and the status of the intravascular volume. During polyuria large amounts of potassium and phosphorous may be lost and must be replaced concurrently.

Hypopituitarism—Loss of hypothalamic function must be assumed in brain death. However, direct measurement and stimulation of pituitary hormones found them to be nearly normal.[7] Ordinarily, therefore, endocrine symptoms are not encountered in these patients. Steroid replacement may, however, be given at "stress" levels, especially if the patient remains hypotensive.

TABLE 3
Sequelae of Hypothermia

1) EKG abnormalities—J. waves
2) Dysrhythmias
3) Decreased cardiac contractility
4) Reduced glomerular filtration
5) Hematologic effects
6) Blood gas changes
7) Pancreatitis

Poikilothermia—Donor patients become poikilothermic after loss of hypothalamic temperature regulation. This is usually manifested as hypothermia although heating blankets, super-heated gas from the mechanical ventilator or pyrogens can produce fever. The consequences of hypothermia listed in *Table 3* generally increase in severity with lower body temperatures and can profoundly affect donor organ perfusion and viability. Prevention of hypothermia is the most effective form of therapy and usually can easily be managed with a heating blanket and maintaining the temperature of inhaled gas from the ventilator at 37°C. More aggressive rewarming techniques include bladder, stomach, and peritoneal lavage with warmed fluids.[8]

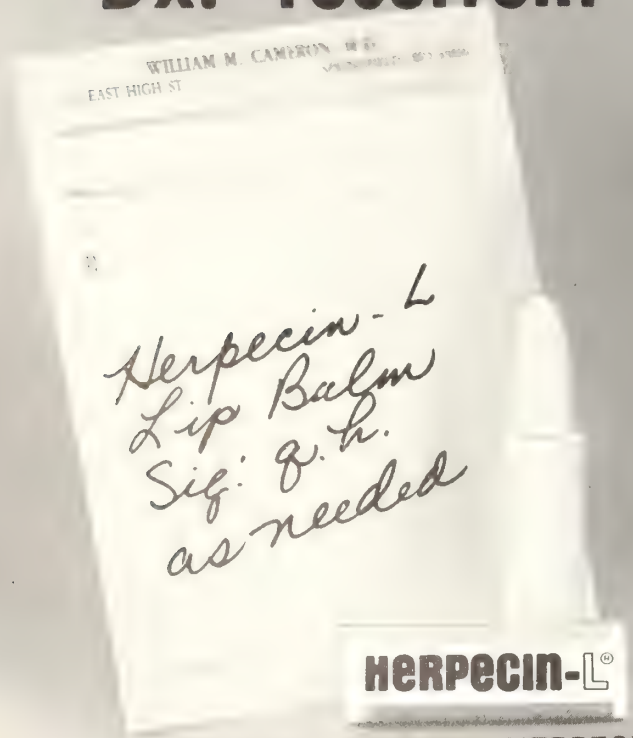
Family Support—The continuing support of the family is a medical management issue for these patients. Frequently, "second thoughts" about the decision to permit organ removal, questions about the logistics of surgery, and continued worry about the patient all require involvement of the physician and other team members. Manifestations of grief are many and common in this situation. A consistent use of terminology is important. Specifically, the hospital team should decide when and by whom the patient is to be pronounced dead, whether organs are "harvested" or "removed," what name (first or surname) is to be used in reference to the patient, etc. There should be no confusion as to the time of death, which is at certification of brain death and before transfer to surgery for organ removal.

In summary, a variety of physiology derangements that threaten the functional status of the donated organs occur in the interval between brain death and organ removal. The key elements for a successful outcome of the important donation include: 1) a knowledgeable and dedicated physician coordinator, 2) careful patient monitoring to anticipate, prevent and prophylactically treat hemodynamic instability, 3) maintenance of adequate tissue oxygen delivery and 4) close coordination among all members of the transplantation team.

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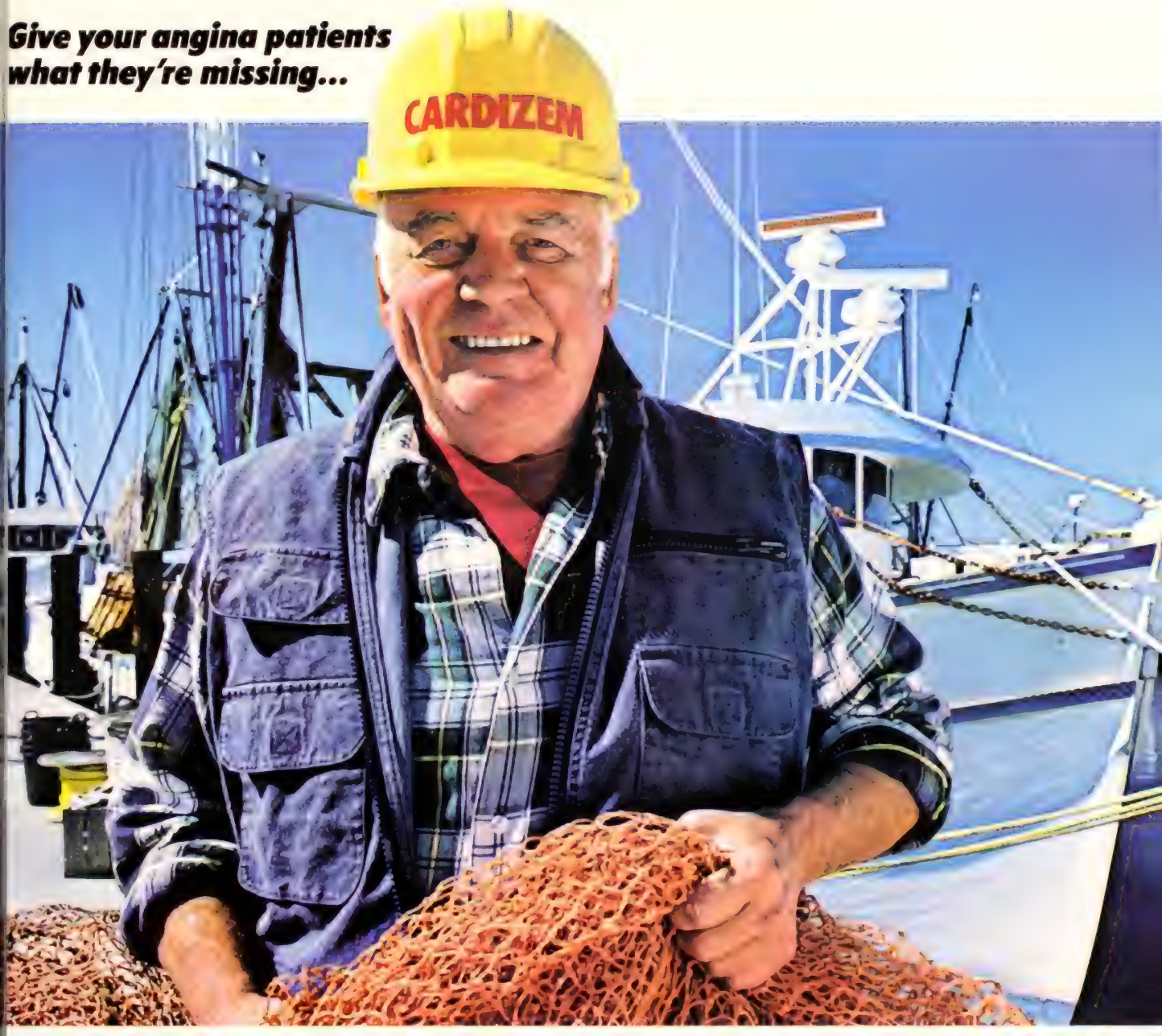
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WARNINGS

1. ***Cardiac Conduction.*** *CARDIZEM prolongs AV node refractory periods without significantly prolonging sinus node recovery time, except in patients with sick sinus syndrome. This effect may rarely result in abnormally slow heart rates (particularly in patients with sick sinus syndrome) or second- or third-degree AV block (six of 1,243 patients for 0.48%). Concomitant use of diltiazem with beta-blockers or digitalis may result in additive effects on cardiac conduction. A patient with Prinzmetal's angina developed periods of asystole (2 to 5 seconds) after a single dose of 60 mg of diltiazem*
2. ***Congestive Heart Failure.*** *Although diltiazem has a negative inotropic effect in isolated animal tissue preparations, hemodynamic studies in humans with normal ventricular function have not shown a reduction in cardiac index nor consistent negative effects on contractility (dp/dt).*
   Experience with the use of CARDIZEM alone or in combination with beta-blockers in patients with impaired ventricular function is very limited. Caution should be exercised when using the drug in such patients.
3. ***Hypotension.*** *Decreases in blood pressure associated with CARDIZEM therapy may occasionally result in symptomatic hypotension.*
4. ***Acute Hepatic Injury.*** *In rare instances, significant elevations in enzymes such as alkaline phosphatase, CPK, LDH, SGOT, SGPT, and other symptoms consistent with acute hepatic injury have been noted. These reactions have been reversible upon discontinuation of drug therapy. The relationship to CARDIZEM is uncertain in most cases, but probable in some. (See PRECAUTIONS.)*

PRECAUTIONS

General. *CARDIZEM (diltiazem hydrochloride) is extensively metabolized by the liver and excreted by the kidneys and in bile. As with any new drug given over prolonged periods, laboratory parameters should be monitored at regular intervals. The drug should be used with caution in patients with impaired renal or hepatic function. In subacute and chronic dog and rat studies designed to produce toxicity, high doses of diltiazem were associated with hepatic damage. In special subacute hepatic studies, oral doses of 125 mg/kg and higher in rats were associated with histological changes in the liver which were reversible when the drug was discontinued. In dogs, doses of 20 mg/kg were also associated with hepatic changes, however, these changes were reversible with continued dosing.*

Drug Interaction. *Pharmacologic studies indicate that there may be additive effects in prolonging AV conduction when using beta-blockers or digitalis concomitantly with CARDIZEM. (See WARNINGS.)*

Controlled and uncontrolled domestic studies suggest that concomitant use of CARDIZEM and beta-blockers or digitalis is usually well tolerated. Available data are not sufficient, however, to predict the effects of concomitant treatment, particularly in patients with left ventricular dysfunction or cardiac conduction abnormalities. In healthy volunteers, diltiazem has been shown to increase serum digoxin levels up to 20%.

Carcinogenesis, Mutagenesis, Impairment of Fertility. *A 24-month study in rats and a 21-month study in mice showed no evidence of carcinogenicity. There was also no mutagenic response in in vitro bacterial tests. No intrinsic effect on fertility was observed in rats.*

Pregnancy. *Category C. Reproduction studies have been conducted in mice, rats, and rabbits. Administration of doses ranging from five to ten times greater (on a mg/kg basis) than the daily recommended therapeutic dose has resulted in embryo and fetal lethality. These doses, in some studies, have been reported to cause skeletal abnormalities. In the perinatal/postnatal studies, there was some reduction in early individual pup weights and survival rates. There was an increased incidence of stillbirths at doses of 20 times the human dose or greater.*

There are no well-controlled studies in pregnant women, therefore, use CARDIZEM in pregnant women only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers. *Diltiazem is excreted in human milk. One report suggests that concentrations in breast milk may approximate serum levels. If use of CARDIZEM is deemed essential, an alternative method of infant feeding should be instituted.*

Pediatric Use. *Safety and effectiveness in children have not been established.*

ADVERSE REACTIONS

Serious adverse reactions have been rare in studies carried out to date, but it should be recognized that patients with impaired ventricular function and cardiac conduction abnormalities have usually been excluded.

In domestic placebo-controlled trials, the incidence of adverse reactions reported during CARDIZEM therapy was not greater than that reported during placebo therapy.

The following represent occurrences observed in clinical studies which can be at least reasonably associated with the pharmacology of calcium influx inhibition. In many cases, the relationship to CARDIZEM has not been established. The most common occurrences as well as their frequency of presentation are: edema (2.4%), headache (2.1%), nausea (1.9%), dizziness (1.5%), rash (1.3%), asthenia (1.2%). In addition, the following events were reported infrequently (less than 1%).

Cardiovascular:	*Angina, arrhythmia, AV block (first degree), AV block (second or third degree — see conduction warning), bradycardia, congestive heart failure, flushing, hypotension, palpitations, syncope*
Nervous System	*Amnesia, gait abnormality, hallucinations, insomnia, nervousness, paresthesia, personality change, somnolence, tinnitus, tremor*
Gastrointestinal:	*Anorexia, constipation, diarrhea, dysgeusia, dyspepsia, mild elevations of alkaline phosphatase, SGOT, SGPT, and LDH (see hepatic warnings), vomiting, weight increase*
Dermatologic	*Petechiae, pruritus, photosensitivity, urticaria*
Other	*Amblyopia, dyspnea, epistaxis, eye irritation, hyperglycemia, nasal congestion, nocturia, osteoarticular pain, polyuria, sexual difficulties*

The following postmarketing events have been reported infrequently in patients receiving CARDIZEM: alopecia, gingival hyperplasia, erythema multiforme, and leukopenia. However, a definitive cause and effect between these events and CARDIZEM therapy is yet to be established.

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A Comparison of Peroxidase-antiperoxidase, Avidin-Biotin Immunoperoxidase Methods

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ADVANCES HAVE BEEN MADE recently in the use of immunoperoxidase staining for the detection of antigen, increasing diagnostic capabilities in paraffin sections.[1-6] Currently, there are two commercially available immunoperoxidase staining procedures: peroxidase-antiperoxidase labeling technique (PAP), and the avidin-biotin affinity method (A/BA).

The PAP method utilizes a series of immunological reactions involving a soluble, species-specific horseradish peroxidase immune complex.[7]

The A/BA procedure relies on a biotinylated secondary antibody and a universal avidin horseradish peroxidase complex. The glycoprotein avidin binds in an essentially irreversible manner to biotin.[8]

In an attempt to identify the best procedure for use in a clinical laboratory affiliated with a community hospital, cases previously stained with the appropriate PAP antibody kit were subsequently restained with the proper A/BA kit and the results evaluated.

Methods

All tissues, whether formalin or B-5 fixed, were stained according to the manufacturer's suggestions. The PAP kits were purchased from Ortho Diagnostic Systems (Rariton, N.J.) and the A/BA kits from Immuno Nuclear Corporation (Stillwater, Minn.).

TABLE
Staining Intensity of PAP Vs. A/BA Procedures

CASE	PAP	A/BA
1. Kappa Light Chains	No Staining	No Staining
2. Lambda Light Chains	No Staining	No Staining
3. Kappa Light Chains	+	No Staining
4. Lambda Light Chains	+	No Staining
5. Prostatic Acid Phosphatase	+ + +	+ +
6. Prostatic Specific Antigen	+ + +	+ +
7. Prostatic Acid Phosphatase	+ +	+
8. Prostatic Specific Antigen	+ +	+
9. Carcinoembryonic Antigen	+ + +	+

Results

The best results, in terms of both the number of cells stained and the intensity of the stain were achieved by using the PAP method (see *Table*).

Discussion

The commercial availability of two immunoperoxidase staining procedures, each stressing specificity and sensitivity for the individual assays, necessitates a critical comparison to determine which is the most appropriate for use. Our comparison of five most commonly examined antigens indicates greater staining, and staining intensity when using the PAP method.

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Cardiac Pathology in the Sudden Death of an Intravenous Drug Addict

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Abstract

Cardiac pathology in the sudden death of a 32-year-old man, a known intravenous drug addict, is reported. Autopsy shows a mural thrombus on the crista terminalis of the right atrium with chronic inflammation, capillary proliferation and diffuse fibrosis of the SA node. The pathogenesis, although not clear, is suggested to be secondary to healed bacterial endocarditis or resolved foreign body thromboembolism involving the right atrium. The immediate cause of death is probably due to cardiac arrythmia resulting from diffuse fibrosis of the SA node.

ALTHOUGH ACUTE DRUG reaction, homicide, suicide or accidents account for most of the deaths in drug addicts,[1,2] cardiovascular complications and sudden deaths may result from foreign body or bacterial contaminations in intravenous drug abuse.[3-9] The following is a study of cardiac pathology in the sudden death of an intravenous drug addict.

Case Report

A 32-year-old man was found dead; he had been cleaning the swimming pool in his backyard. He was a known intravenous drug addict for many years.

At autopsy, there were many needle marks on the dorsum of the hands and the antecubital fossae. The heart weighed 380 gm. The coronary arteries were widely patent. The valvular leaflets were grossly unremarkable. The thickness of the left ventricle measured 1.5 cm and the right ventricle 0.4 cm. There was no recent or old myocardial infarct. The cardiac chambers were within normal limits except for mild dilatation of the right atrium. A partially organized mural thrombus, measuring 3 × 1.5 × 0.5 cm, was present along the crista terminalis and extending to the pectinate muscles of the right atrial appendage. The myocardium beneath the mural thrombus showed yellowish gray discoloration with focal areas of hyperemia.

Microscopically, the sections from the SA node showed a partially organized thrombus adherent to the endocardium with diffuse fibrosis of the myocardium (*Fig. 1*). High power view of the SA node showed replacement of the nodal tissue by chronic inflammation, capillary proliferation and diffuse fibrosis (*Fig. 2*). The sections from the AV node, right and left ventricles and the interventricular septum did not show significant histopathologic changes. No foreign body or microorganisms were identified microscopically. Cultures of the thrombus and the blood revealed no microorganisms. Toxicology studies were also negative for drugs. The lungs were moderately edematous and congested. There were no thromboemboli in the lungs.

Discussion

Aside from acute drug reaction, systemic infections and cardiovascular complications often cause clinical problems in intravenous drug addicts. Infective endocarditis is implicated for 10% of the deaths in intravenous drug addicts.[3] The endocarditis usually affects normal valves, and involves more frequently the right side of the heart rather than the left side.[4-7] In a review of 344 cases of narcotic-associated endocarditis by Reisberg, Staphylococcus aureus is the most frequently isolated organism (62%), followed by the streptococci group (21%), Pseudomonas aeruginosa (5%), candida species (5%) and multiple microorganisms (5%).[5]

Clinically, the most common symptoms include fever, chills, malaise, headache and pleuritic chest pain. Cardiac murmurs can be detected in about two-thirds of the cases.[6,7] The mortality is usually very high in spite of adequate medical treatment. The high mortality rate is attributed to the advanced stage of the disease and the virulence of the microorganisms involved in the drug addicts.[3,5]

Other cardiovascular complications in intravenous drug addicts, such as vascular occlusion, mycotic aneurysm, arteriovenous fistula, septic pulmonary thromboembolism and acute cardiomyopathy have been reported.[8] Sudden deaths may result from septic emboli to the brain, heart or lungs.[9]

In the present case, there is a mural thrombus in the right atrium with chronic inflammation and diffuse fibrosis of the SA node. The pathogenesis of the mural thrombosis in this

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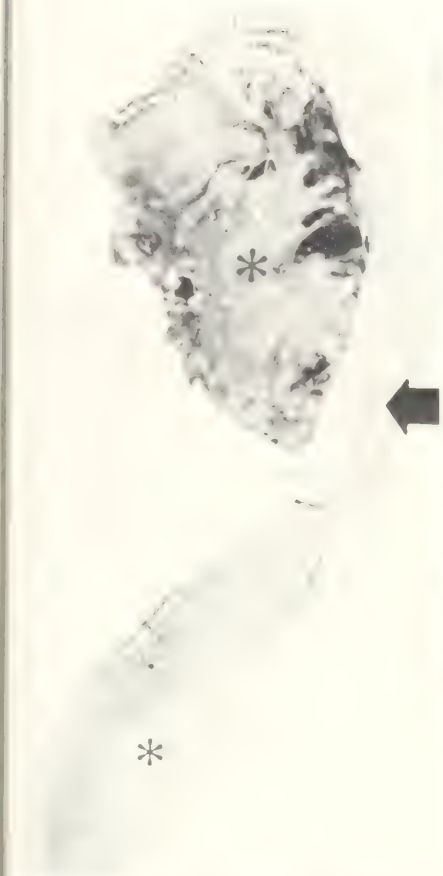


FIGURE 1: Section of the SA node (arrow) shows a partially organized thrombus (large asterisk) adherent to the endocardium with diffuse fibrosis (small asterisk) of the myocardium. H & E stain, X10.

case is unknown. It may be secondary to "healed" bacterial endocarditis or "resolved" foreign body thromboembolism. The immediate cause of death is probably due to cardiac arrythmia resulting from diffuse fibrosis of the SA node.



FIGURE 2: High power view of the SA node shows complete replacement of the nodal tissue (N) by chronic inflammation, capillary proliferation and diffuse fibrosis. SA node artery (A). Mural thrombus (arrows). H & E stain, X100.

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HEMATURIA UPDATE

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Abstract

Hematuria is a commonly encountered condition that frequently has very serious implications. The causes of hematuria are briefly outlined in this review, and a methodological approach to diagnosis is suggested. All cases require investigation. Generally, a few simple laboratory tests will detect easily diagnosed problems such as bacterial infection, while more extensive, elaborate and invasive studies are reserved to identify neoplasms and other conditions in the remaining cases.

WHEN THE QUANTITY of erythrocytes (RBCs) gaining entry into the urine exceeds 5 per high-power field on microscopic examination of the urinary sediment, or an Addis count of greater than 500,000 RBCs per 12 hours is encountered, hematuria is said to be present. By this definition hematuria is exceedingly common, and may be present in up to 4% of the general population.[1]

The importance of hematuria lies in the fact that, even in very mild instances, hematuria may be the initial feature of remediable but highly serious conditions, such as malignant neoplasms, infection, or obstruction of the urinary tract. Each of these examples hinges on rapid diagnosis and treatment to assure a favorable, and in some cases, non-lethal outcome.

Thus, the physician is obligated to carefully evaluate each patient with hematuria, and to make a thorough effort to exclude a malignant neoplasm if the source of the hematuria is not otherwise apparent.

Causes of hematuria may be classified in the general categories outlined in *Table 1*. Hematologic causes obviously are more likely in individuals receiving anticoagulant medication, those with histories of bleeding disorders, and those whose ethnic background raises the possibility of hemoglobinopathy.

One should keep in mind that abnormal urinary tracts are more likely to bleed than normal ones, and that a search for additional abnormalities, or at least surveillance, may be warranted. The most dangerous causes of renal bleeding are malignant neoplasms, particularly hypernephroma, and renal infections, such as acute pyelonephritis and tuberculosis. These entities are treatable and may be lethal if undiagnosed.

TABLE 1
Classification of Hematuria as to Origin

1) Hematologic hematuria
   a) coagulopathy
   b) sickle cell hemoglobinopathy
2) Renal hematuria
   a) glomerular disease
   b) infectious renal disease
   c) cystic and vascular malformations
   d) neoplasms
   e) ischemic disease
   f) renal trauma
   g) hypersensitivity
   h) hypercalciuria
3) Post renal hematuria
   a) mechanical
   b) inflammatory
   c) neoplasms
   d) endometriosis
   e) prostatic hypertrophy
   f) exercise related
4) False hematuria
   a) vaginal bleeding
   b) factitious
   c) pigmenturia

Under the heading of hypersensitivity are included all the allergic interstitial nephritides, and drug-related renal causes of hematuria. Common examples are beta-lactam antibiotics and non-steroidal anti-inflammatory drugs. An exhaustive list is given elsewhere.[1] Mechanical causes of post-renal bleeding include stones, reflux, indwelling catheters and other foreign bodies. Under false hematuria the physician must consider endogenous conditions such as porphyrinuria, as well as exogenous entities such as certain foods and drugs which may discolor the urine.[2] Because of space limitations, only the more important causes will be discussed.

Causes of hematuria as to approximate frequency are given in *Table 2*. Urinary calculi are the most common causes of urinary bleeding. Generally, stones cause characteristic symptoms; however, occasionally the hematuria is painless. Ninety per cent of calculi contain sufficient calcium to be visible on plain roentgenograms. An intravenous urogram will confirm their location and is the procedure of choice for the demonstration of lucent stones.

Neoplasms are the most serious cause of hematuria but are relatively

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rare until after age 40.[3] Approximately two-thirds of cancers reside in the bladder. The diagnosis requires cystoscopy, but in very early cases their presence can be detected only by urine cytologic study. Renal cell carcinomas may cause continuous flank pain, fever, hypercalcemia, anemia, or polycythemia. The diagnosis is suggested by intravenous urography. Tomography is helpful in that regard.

Various other urinary tract tumors may cause hematuria, including transitional cell cancers of the renal pelvis or ureter, prostatic cancer, and tumors of the urethra.

Acute infections may cause hematuria, generally engender other symptoms, and are more common in women. Benign prostatic hypertrophy is a common cause of hematuria in older men. However, additional investigation is crucial, since in half of cases the true cause of bleeding is another lesion such as a stone or tumor.[4]

Glomerulonephritis is a common cause of hematuria in young adults and children. It frequently is not attended by well-known features, such as edema, hypertension, or proteinuria, and may occur without the presence of red cell casts. In many instances, the failure to identify red cell casts is less a function of their absence, than lack of diligence for which they were searched. First morning voided urine specimens examined by an experienced physician greatly increase their incidence.

Diagnostic approaches are given in *Table 3*. The diagnosis should always begin with a detailed history and a careful physical examination. Certain features in the history are particularly important. For instance, bloody urine at the beginning or end of micturition suggests a urethral, prostatic or bladder lesion. Brown or tea-colored urine suggests glomerulonephritis while bright red urine is more consistent with lower urinary tract bleeding. The presence of clots implies a post glomerular source. Pain may provide clues as to the presence of stones, infection, cystic disease, or tumors.

TABLE 2
Common Causes of Hematuria in Adults*

1) Urinary calculi — 20%
2) Urinary tract neoplasms — 15%
3) Urethritis and urethrotrigonitis — 15%
4) Acute urinary tract infections — 10%
5) Benign prostatic hypertrophy — 10%
6) Glomerulonephritis — 10%
7) Miscellaneous — 20%

*Incidence percentages are approximate and are a function of each individual physician's practice.

Systemic symptoms, such as rash, fever, or arthralgia suggest a systemic disease, while ecchymosis, an abnormal bleeding tendency, or African or Mediterranean background may point to a hematologic cause.

A complete list of medications is vitally important. Temporal events such as trauma, menstruation, or vigorous exercise may provide important clues. The physical examination should include a search for systemic illness, as well as a careful palpation of the abdomen to detect the renal tenderness and enlargement of hydronephrosis, polycystic kidneys, or renal cell carcinoma. Rectal examination, inspection of the external genitalia, and pelvic examination in women may identify a specific cause.

Additional evaluation may employ an algorithmic approach.[5] Careful urinalysis, urine culture, and simple tests of renal function are inexpensive and of high yield. Sickle cell screening should be performed in black patients. A quantitative test for protein excretion may provide an important clue to the presence of renal parenchymal disease and also allows a more sensitive assessment of renal function. Tests for a coagulopathy may be indicated as well.

An intravenous urogram is indicated if an obvious cause has not been identified, and if other important possibilities are as yet not excluded. Identification of stones will prompt either expectant management or a procedure, as well as additional evaluation. Abnormalities in the collecting system will warrant retrograde studies with urethrocystoscopy. Identification of a renal mass should prompt ultrasound examination, cyst aspiration if indicated, and further studies such as CT scans and arteriography. If the intravenous urogram is normal, cystoscopy may be indicated. Elderly patients with a normal examination will warrant follow-up with cytological examinations. Cultures of the urine for mycobacteria may be advisable as well.

If the results of cystoscopy, urography, and cytological studies are negative, a screening of family members for hematuria, and additional search for blood dyscrasia is indicated. Individuals with unilateral bleeding, or clot formation warrant arteriography to search for neoplasm or arteriovenous malformation. Patients not diagnosed at this point are likely to have glomerulonephritis, particularly children.

TABLE 3
Diagnostic Approach

1) Thorough history
2) complete physical examination
3) urinalysis*
4) urine culture
5) quantitative protein excretion (opportunity to also check calcium excretion and creatinine clearance)
6) renal function tests
7) coagulation and hemoglobinopathy tests
8) intravenous urogram
9) diagnostic ultrasound
10) urethrocystoscopy
11) urine cytology
12) arteriography
13) renal biopsy

*Repeated examination of first morning voided specimens by the physician may be warranted.

In children the diagnostic approach requires some modification and the need for invasive studies is altered. For instance, indications for retrograde pyelography should be confined to the evaluation of non-functioning kidneys, and to the search for unilateral hematuria in children whose intravenous urogram and voiding cystogram are normal.[2]

Recently, attention has been drawn to the association of idiopathic hypercalciuria and asymptomatic gross hematuria in children.[6] These children present with recurrent hematuria. They have normal renal function, no proteinuria, and no casts are identified. Furthermore, the lower tract evaluation is negative. Biopsies in such children have not yielded explanations to account for the hematuria. Urinary calcium excretion was found to be elevated (greater than 4 mg calcium per kg per 24 hr.) Treatment with thiazide diuretics resulted in disappearance of the hematuria and decrease in the calcium excretion to normal values (2 mg calcium per kg per 24 hr). Some of these children eventually developed stone disease. Urinary calcium excretion is easily measured, and should be included in the evaluation of children with hematuria without obvious cause.

Many individuals with glomerulonehpritis presenting as monosymptomatic hematuria undergo needless instrumentation because of failure to perform an adequate urinalysis and quantitative protein determination. Renal biopsy is generally the final step in pursuing the diagnosis of hematuria. The decision to do a biopsy must be individualized. Some glomerular diseases can be diagnosed or suggested by other means, such as serological tests, or tests of hearing in the patient or in other family members. Only a few glomerular diseases are treatable in any specific way.

Some prognostic information may be forthcoming, but generally less than the patient and the physician expect. Detailed follow-up is more important than a specific histological diagnosis in most instances. Recurrent monosymptomatic hematuria occurs in a select group of patients. The episodes of gross hematuria appear most commonly in association with an upper respiratory illness. Renal function tests are normal and the protein excretion is less than 0.5 grams per day. The interval between episodes is variable. Renal biopsy generally reveals only mild focal changes. Deposits of IgA may be found within glomeruli. The outcome is benign.

Finally, physicians should be aware of the increasing numbers of individuals who engage in vigorous exercise and develop hematuria. Hematuria in runners has been known for decades.[7] Previous notions that the hematuria is usually of glomerular origin were probably incorrect. In most instances dysmorphous red cells are not seen, although running can lead to cylindruria and proteinuria.

Runners' hematuria appears to be exclusively confined to males. Episodes are loosely associated with weekly mileage, and are uncommon in runners who run less than 20 miles per week. Most runners will report voiding symptoms and many experience clots. Although detailed urological studies of this phenomenon have not been done, available evidence incriminates the urinary bladder neck, prostate gland, or posterior urethra. Affected runners usually choose to eschew cystoscopy; however, since older individuals are developing interest in exercise the problem does not lend itself to easy solution. Male runners over 40 years of age must be made aware of frequency of malignancy in their age group. (It also should be noted that hematuria may occur in crew members and drivers of rough-riding vehicles such as military tanks.)

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Look-Alike and Sound-Alike Drug Names

BENJAMIN TEPLITSKY, R. PH.
Brooklyn, N.Y.

Look-alike and sound-alike drug names can be misinterpreted by a nurse reading doctors' orders or by a pharmacist compounding physicians' prescriptions. Such misunderstandings can result in the administration of a drug not intended by the prescriber. Awareness of such look-alike and sound-alike drug names can reduce potential errors.

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Category:	Diaper rash and odor control	Urinary anti-infective
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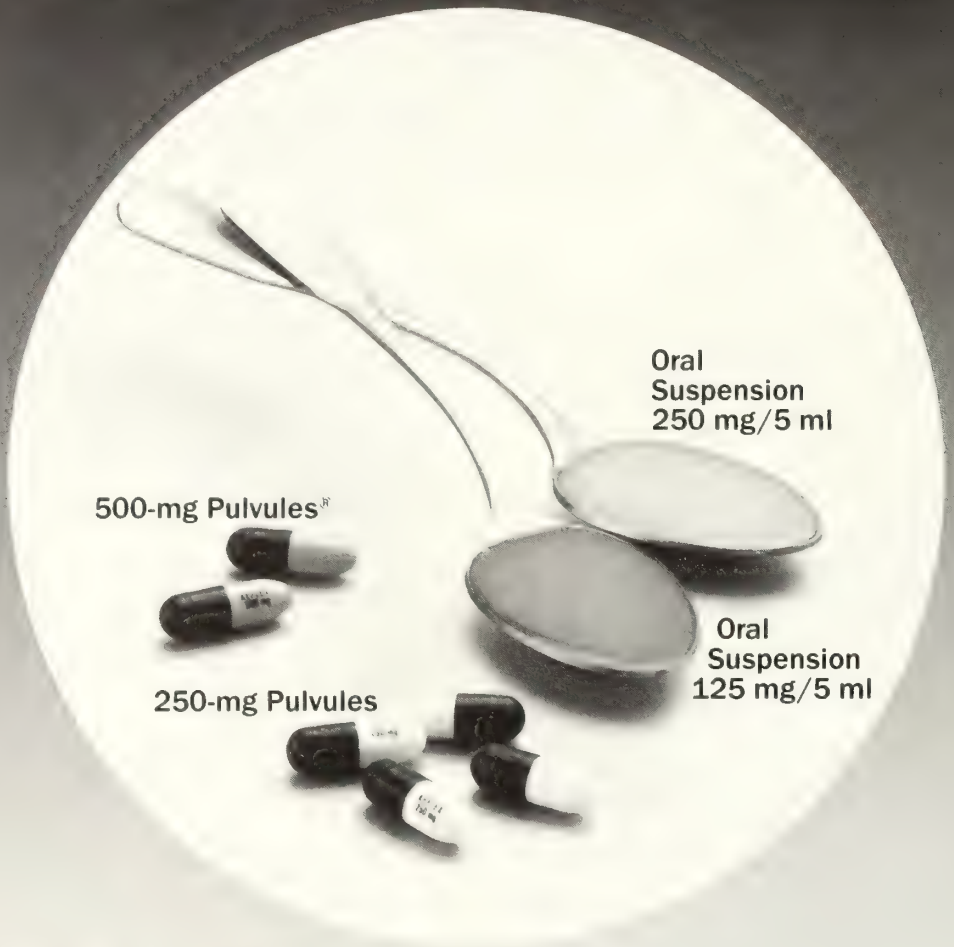
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Clinico-Pathologic Conference

32-Year-Old Man with Nausea, Vomiting and Metastatic Adenocarcinoma

Edited by
RICHARD J. KOVACS, M.D.
Indianapolis

**Grand Rounds—
Indiana University
School of Medicine**

A 32 YEAR OLD MAN was admitted to the hospital with intractable nausea, vomiting and diarrhea. Three years earlier the patient had presented with nausea and vomiting. He was found to have hepatomegaly at that time, and a liver biopsy revealed metastatic adenocarcinoma. Other evaluation at that time failed to definitively determine the primary lesion. A CT scan of the chest (*Figure 1B*) at that time did show a right hilar mass with some calcifications adjacent to the mass. CT scan of the abdomen (*Figure 1A*) revealed the liver to be enlarged as well as the spleen. The pancreas was normal in size. No retroperitoneal masses or adenopathy were felt to be present. Upper GI series and small bowel follow through were normal at that time. An intravenous pyelogram was normal as was a barium enema.

Consultation with an oncologist at that time was made and it was recommended that the patient be treated with cisplatinum and Velban. He received seven courses of cisplatinum and 14 courses of Velban. Thirty months prior to this admission he was admitted to the University Hospital for the therapy of acute renal failure. Creatinine clearance prior to his final course of platinum was 60cc per minute with a serum creatinine of 1.7 mg/dl. Vomiting persisted after his chemotherapy and he was found to have a BUN of 142 with a serum creatinine of 2.5 mg/dl. He was initially begun on hemodialysis but was soon switched to continuous ambulatory peritoneal dialysis. Further evaluation for primary site of the adenocarcinoma at that time included a CT scan of the abdomen and pelvis, which showed a right pleural effusion and a right basilar infiltrate in the lung but the abdomen was unremarkable. A testicular ultrasound was negative.

Because of a systolic murmur, an echocardiogram and phonocardiogram were obtained. The echocardiogram showed normal chamber sizes, a minimal pericardial effusion and no other abnormalities. Phonocardiography revealed a systolic ejection murmur that was early and felt to be compatible with a functional murmur or with only mild aortic stenosis. Jugular venous pressure tracings taken at the time of phonocardiography showed prominent "a" waves in the jugular venous pulse and suggested right ventricular hypertrophy. Review of his original biopsy specimens was performed and it was agreed that this tumor represented an adenocarcinoma and was unlikely to be a germ cell tumor, or lymphoma and no further treatment was recommended.

Two months later the patient required readmission to the University Hospital because of persistent nausea and vomiting. At that time upper GI series showed free esophageal reflux. Endoscopy was performed which showed a normal fundus, edematous gastric folds, and reflux of stomach contents into the esophagus. He was treated with cimetidine, antacids and elevation of the head of his bed with some relief of his symptoms.

He was readmitted to the University Hospital two months later, again because of dehydration secondary to intractable nausea and vomiting and

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This is an edited transcript of the clinicopathologic conference conducted in April 1986 during a Grand Rounds session of the Dept. of Medicine, Indiana University School of Medicine. Discussants:
David Crabb, M.D., Assistant Professor of Medicine;
Dan Visscher, M.D., Pathology Resident;
Bruce Waller, M.D., Professor of Pathology and Medicine.

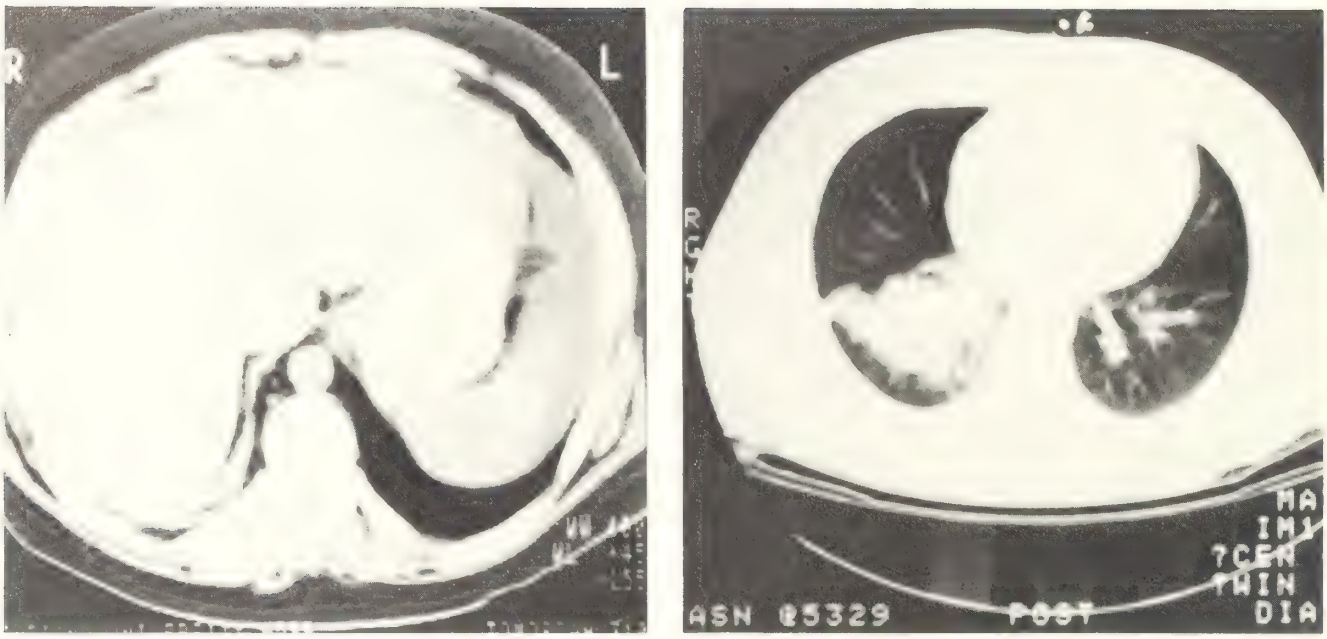


FIGURE 1: CT sections through liver (A) and the base of the lungs (B). The liver is homogenous in density. The base of the right lung contains an infiltrate or mass with stranding to the periphery of the lung.

because he had subsequently developed diarrhea. He was given intravenous fluid, cimetidine, antacids, triethylperazine and lorazepam. A CT scan of the abdomen was performed and this was unremarkable. Because of the persistent pulmonary infiltrate and pleural effusion, an ultrasonically guided thoracentesis was accomplished and yielded an exudative effusion. Pleural fluid cytology was negative as were cultures. Small bowel enteroclysis was reported as showing a rapid transit time through the small bowel. Pulmonary consultation was obtained and the patient had fiberoptic bronchoscopy, which showed collapsed and twisted airways to the right lower lobe without endobronchial lesions. Upper GI endoscopy was repeated, showing erosive reflux esophagitis. Biopsy of a prepyloric mucosal lesion was done and showed only normal mucosa. He was treated with ranitidine and loperamide with some resolution of his diarrhea as well as his nausea.

One month prior to admission he was again admitted with intractable nausea and vomiting. In addition, his diarrhea had returned despite treatment with loperamide and he was having several liquid stools per day. He was again hydrated and upper GI endoscopy was performed which showed erosive esophagitis and duodenitis with early stricture formation in the esophagus. Examination of his stool showed no white cells and no fat or meat fibers. Cultures for enteric pathogens were negative and no parasites or ova were seen on smear. He was given intravenous fluids, continued to have peritoneal dialysis, and was treated with ranitidine, antacids and Carafate.

One month later he was again admitted to the University Hospital with persistent nausea and vomiting and dehydration. He had continued to have several loose stools per day despite treatment with loperamide. He denied significant abdominal pain. He occasionally experienced hematemesis but denied melena. Past medical history was unremarkable. Medications on admission were vitamins, ranitidine, antacids, sucralfate, and loperamide.

The patient had smoked one pack per day of cigarettes for 10 years. He did not drink alcohol. Family history was unremarkable. Physical examination revealed a thin, lethargic, white male whose head and neck appeared somewhat flushed. Blood pressure was 72/40 supine, with a pulse of 110, and respirations of 22. HEENT exam was unremarkable. The fundi were normal. The neck was supple without thyromegaly or adenopathy. Jugular venous distention was not detected. The carotids were normal. The chest was clear. Cardiac exam revealed a normal S_1 and S_2. There was a 3/6 systolic murmur at the left sternal border with radiation to the base and there was a 2/6 holosystolic murmur at the apex that radiated into the axilla. A Tenkhoff catheter was in place. Bowel sounds were active. There were no masses detected. The liver was 16 cm in span and firm. The spleen tip was 4 cm. below the costal margin. Rectal exam revealed no masses and the stool was heme positive. Intravenous access was placed and the patient was hydrated vigorously with only minimal response of his blood pressure.

On the second hospital day a cloudy

dialysate was noted from his CAPD catheter. White count on the fluid was 230/cu mm. Peritonitis protocol was initiated. Early the next morning the patient began to have coffee ground emesis and his blood pressure fell. His emesis became profuse but he refused nasogastric suction. A half hour later he was found unresponsive in his bed. Cardiopulmonary resuscitation was undertaken, a tension pneumothorax on the left was diagnosed and a chest tube was placed which returned copious stomach contents from the chest cavity. Clinical diagnosis was made of a ruptured esophageal gastric junction but the patient was not able to be supported with pressors and fluids sufficiently to be felt a candidate for abdominal exploration. He died several hours later. An autopsy was performed.

Dr. Crabb: The case is that of a 32-year-old man with the following salient clinical problems: metastatic adenocarcinoma in the liver with a right hilar mass and pleural effusion; nausea, vomiting, severe erosive esophagitis, and diarrhea; systolic murmurs and prominent A waves; chronic renal failure which developed during the course of chemotherapy with platinum and Velban; and a terminal illness characterized by unrelenting shock, peritonitis, and Boerhaave's syndrome (esophageal rupture).

Let me point out several features of this illness that I believe are keys to the diagnosis. He has survived for three years with metastatic cancer in the liver; this in itself is quite unusual with most malignant neoplasms. He does not have a definitely diagnosed primary lesion, although he has a hilar mass and extrinsic compression of the bronchus in that region. A search for a gastrointestinal primary has not revealed another tumor. He appears to have progressive valvular heart disease, evidenced by murmurs that have become louder during his illness. He has severe esophagitis accompanied by nausea and vomiting, which has not responded to intensive therapy, and he has undiagnosed, chronic or relapsing diarrhea. These features suggest to me that this man 1) does not have a typical adenocarcinoma or gut or lung origin; rather he has an unusual lung tumor, and 2) several of his symptoms and signs suggest that the tumor is secreting a biologically active humour.

First, what is going on in this man's lung? It is worth noting that the patient is young but has smoked. He has experienced few pulmonary symptoms, and he has not suffered hemoptysis. The tumor has resisted diagnosis. Bronchoscopy was not diagnostic. The mass has not gotten much larger during three years of observation. These features, combined with the suggestion of ectopic hormone production, are compatible with a bronchial carcinoid.

The other tumors which produce ectopic hormone syndromes are squamous cell or small cell lung cancer, but the three-year survival and the reported adenocarcinoma found on liver biopsy are strongly against those diagnoses. Patients with carcinoids, on the other hand, usually live for more than five years. Carcinoids are commonly proximal in location and may calcify, as in this case.

It should be pointed out that this case is not entirely typical of bronchial carcinoid, as most are endobronchial and cause hemoptysis. However, some carcinoids may grow almost entirely extraluminally, as appears to have occurred in this patient. There is also a pathological entity known as composite carcinoma-carcinoid, in which both elements are present in the tumor. This is not very surprising, since the term carcinoid was coined to indicate the close resemblance between this tumor and conventional adenocarcinomas of the bowel.

One last consideration in any patient with a lung mass is that it is a metastatic lesion. It is possible that both the liver and lung harbor metastases from a primary carcinoid arising elsewhere, such as in the small intestine.

The second impressive feature of this man's illness was the large number of somewhat bizzare symptoms and signs he manifested. In particular, his cardiac murmurs, diarrhea, and acid-peptic disease of the esophagus are highly suggestive of ectopic hormone production by his tumor. Cardiac murmurs are associated with carcinoid syndrome, and heart failure with pheochromocytoma.

Diarrhea can be caused by a large number of endocrine syndromes, such as overproduction of serotonin, calcitonin, vasoactive intestinal polypeptide (VIP), gastrin, and prostaglandins. Esophagitis may be considered part of the spectrum of acid-peptic disease of the upper gastrointestinal tract, and may be caused by hypersecretion of gastrin (Zollinger-Ellison syndrome), and potentially by bombesin, which is a gastrin-releasing factor. Bombesin secretion has been reported with oat cell lung cancer. Histamine, which is overproduced in mastocytosis and basophilic leukemia, causes acid secretion. Peptic ulcer is also seen at higher than expected frequency in the carcinoid syndrome, although the mechanism is not certain. This patient also had flushing and terminal, refractory shock. These vascular phenomena are associated with the production of serotonin, kinins, and prostaglandins, and are quite suspicious for carcinoid syndrome.

From what I have discussed, I think the diagnosis is almost certainly a carcinoid tumor causing the carcinoid syndrome. Let me review each of these entities.

Carcinoid tumors usually arise in the ileum, where they are small and often multiple. The majority of carcinoids are endocrinologically silent. All other sites are relatively uncommon, and include the rectum, stomach, colon, bronchus, ovary, thymus, pancreas, and other much less common sites or origin. Most of these tumors produce symptoms from local effects, such as bleeding or obstruction of the gut or airway. The carcinoid syndrome

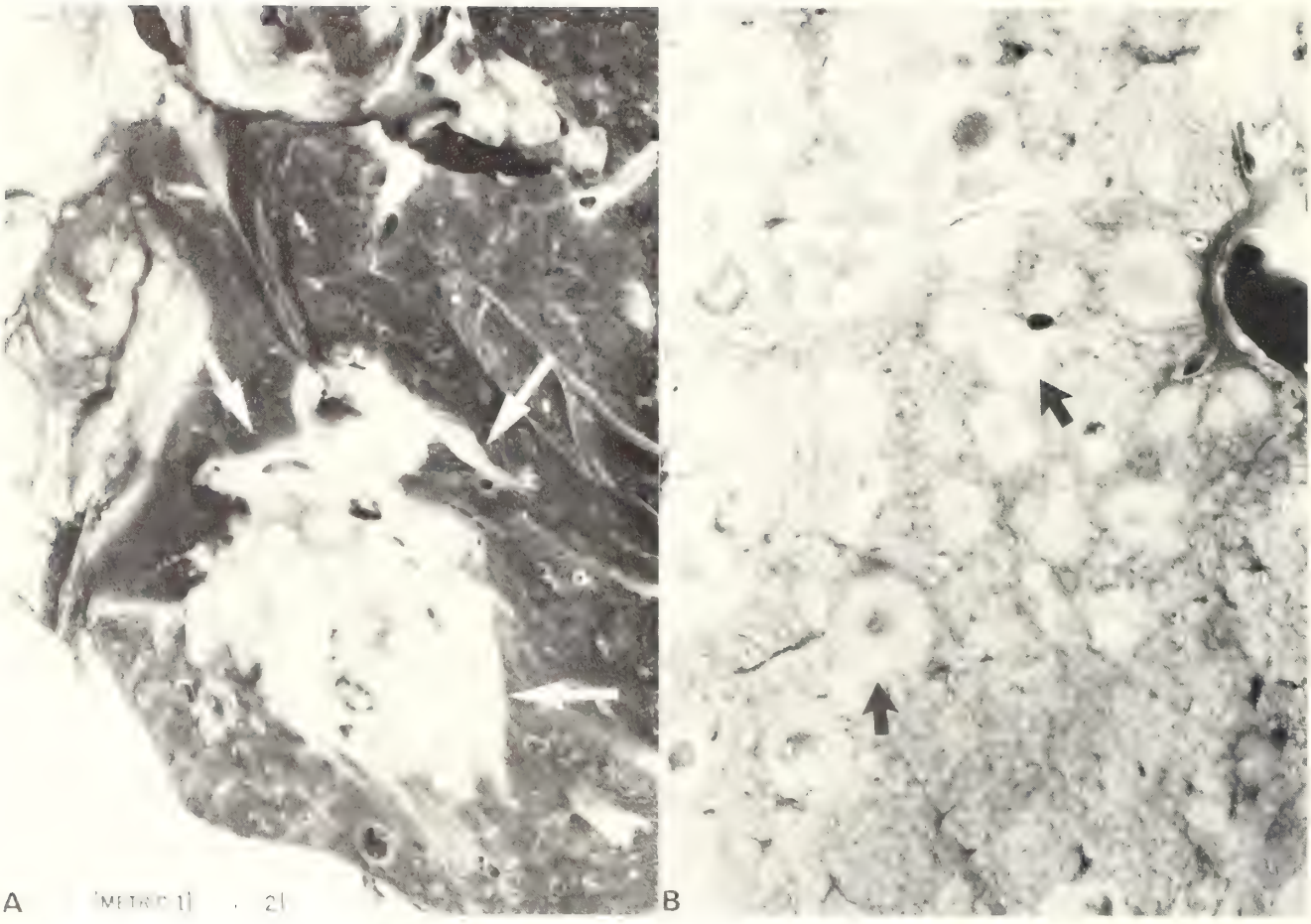


FIGURE 2: Photographs of right lung (A) and liver (B) showing the neuroendocrine (carcinoid) tumor. The primary site was the right lower lobe of the lung (arrows) with extensive metastasis to the liver and other organs (arrows).

denotes a variety of systemic manifestations of ectopic hormone production by carcinoid tumors. 70-80% of cases of carcinoid syndrome are due to ileal primaries, almost always with massive hepatic metastases. The hormones made in the tumor can be degraded by the liver, therefore the carcinoid syndrome will not occur unless large hepatic tumors are present which drain into the hepatic veins, or unless the tumor arises in an organ drained by the systemic veins, such as the lung or ovary. Diarrhea is the commonest complaint (80% of patients), followed by cutaneous flushing (75%), telangiectases (50%), cardiac manifestations (25-50%), and bronchospasm (10-15%). The cardiac lesions typically involve the valves of the right heart, producing tricuspid insufficiency and pulmonic stenosis.

Bronchial carcinoids are associated with a somewhat different carcinoid syndrome. Since the vessels draining bronchial tumors empty into the left heart, the carcinoid syndrome can occur without hepatic metastases. In addition, the left as well as right heart valves may be damaged in patients with bronchial carcinoids. Besides the lesions of the endocardium, fibrotic reactions can be noted in the retroperitoneum, peritoneum, or mesentery. The classic carcinoid syndrome can also be produced by other neuroendocrine tumors such as medullary carcinoma of the thyroid, islet cell tumors, small cell lung cancer, and pheochromocytoma.

Let me now attempt to explain the course of this man's illness. I believe he has a primary bronchial carcinoid tumor with metastasis to the liver. The appearance of adenocarcinoma in the liver biopsy may represent the composite carcinoma-carcinoid. The issue of whether this is neuroendocrine (carcinoid) or not could be decided by reexamination of the biopsy by electron microscopy. Less likely possibilities are the presence of a carcinoid arising in an unusual location or other neuroendocrine tumor with metastatis to both lung and liver. The patient's diarrhea and heart murmurs are the result of the carcinoid syndrome. He has evidence for right heart lesions (prom-



FIGURE 3: Carcinoid heart disease. A. Carcinoid endocardial plaques (arrows) involve right atrium (RA) and papillary muscle (PM) of tricuspid valve. B. Carcinoid plaques involve the ventricular aspect of the tricuspid valve producing tricuspid stenosis and regurgitation. The arterial aspects of the pulmonic valve (PV) are extensively thickened producing pulmonic stenosis. PT = pulmonary trunk, RVOFT = right ventricular outflow tract.

inent "a" waves, probably the result of pulmonic stenosis) as well as left-sided lesions (ejection and regurgitant murmurs, suggesting aortic stenosis and mitral insufficiency), which is best explained by a bronchial tumor. The intractable esophagitis suggests that the tumor was causing gastric hypersecretion, possibly by ectopic production of gastrin or histamine.

Finally, his terminal shock may have been caused or worsened by tumor production of vasoactive substances. It has been noted that carcinoid tumors are sometimes sensitive to adrenergic stimulation, and respond with increased release of hormones. This patient's peritonitis may have resulted in adrenergic stimulation of his tumor, and this could have caused shock. The administration of the usual vasoactive adrenergic drugs would have only worsened the condition. I would also like to speculate that the patient's renal failure might have been precipitated by the combination of dehydration from diarrhea and vomiting, and tumor-induced vasodilation, or that he has retroperitoneal fibrosis to account for his renal disease.

What is the usual course for patients with metastatic carcinoid tumors? We do not have very good chemotherapy for this tumor. Fortunately, it has a very long natural history. Five- and 10-year survival is relatively common. It is obviously important to recognize this so that the symptoms of the carcinoid syndrome will be aggressively treated. Up to half of patients ultimately die from cardiac complications of the syndrome, which is why it was first

reported by cardiologists.

Dr. David Crabb's diagnosis: Bronchial carcinoid with metastasis and carcinoid syndrome.

I would like to offer the following epithet in closing:

This man was addicted to moanin'
Confusion, edema, and groanin'
Intestinal rushes,
Great tricolor flushes,
And died of too much serotonin.

Dr. Visscher: At necropsy, the right hemithorax contained 500 cc of cloudy fluid with dense fibrous adhesions adjoining the diaphragmatic segment of the right lower lobe of the lung to the superior surface of the right hemidiaphragm. Longitudinal sections of the right lung disclosed a fleshy, while-yellow, poorly-demarcated mass measuring about 3.5 cm in diameter (*Figure 2*). Satellite nodules were noted along bronchioles and vessels adjacent to the mass. Histologically, the lung mass demonstrated features of a neuroendocrine (cardinoid) neoplasm: a trabecular pattern of cell nests separated by fibrous strands, rosette formation and sinusoidal vascularity. Metastatic deposits were found in the hilar and peritracheal nodes.

The liver contained massive amounts of well-demarcated masses of metastatic tumor (*Figure 2B*), which histologically were similar to that in the lung. Additional carninoid metastases were found in the celiac and peripancreatic nodes, spleen and adrenal gland. In addition, the tail of the pancreas disclosed a well-circumscribed islet cell tumor. The neoplasms in various tissues were studied immunohistochemically. Tumor in the lung and liver were positive for gastrin, ACTH, and serotonin, while the islet cell tumor of the pancreas was positive for serotonin.

The heart weighed 310 grams and disclosed whitish endocardial plaques located in the right atrium and right ventricle (*Figure 3*). Right atrial plaques involved entrance points of the inferior and superior vena cavae, coronary sinus ostium and multiple areas of the atrial body. Right ventricular inflow and outflow endocardium had focal areas of whitish plaques. The ventricular aspect of the tricuspid valve was entensively thickened by the same pearly-white material (*Figure 3*). The pulmonic valve was primarily thickened on the arterial aspect of each cusp and the commissures were fused. The valvular plaque deposits on the tricuspid and pulmonic valves produced anatomic stenosis. The left atrium was normal but the chordae tendineae of the mitral valve (*Figure 4*) were extensively thickened by whitish plaques. Left ventricular endocardium and aortic valve were normal. Histologically, the endocardial plaques in all areas consisted of fibrous tissue free of elastic fibers. The plaques contained ground substance composed of acid mucopoly-

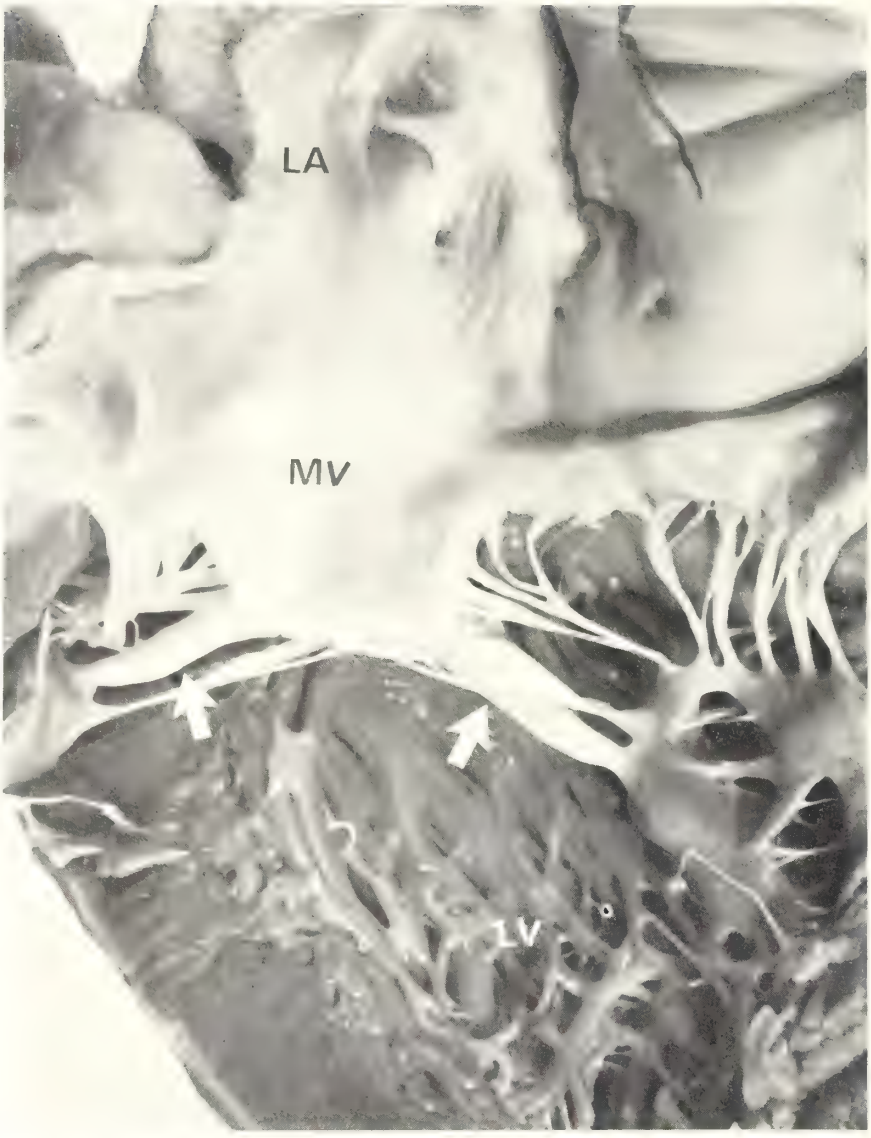


FIGURE 4: View of opened left atrium (LA) and left ventricle (LV). The chordae tendineae of the anterior mitral valve (MV) leaflet are "coated" by the whitish carcinoid plaque (arrows).

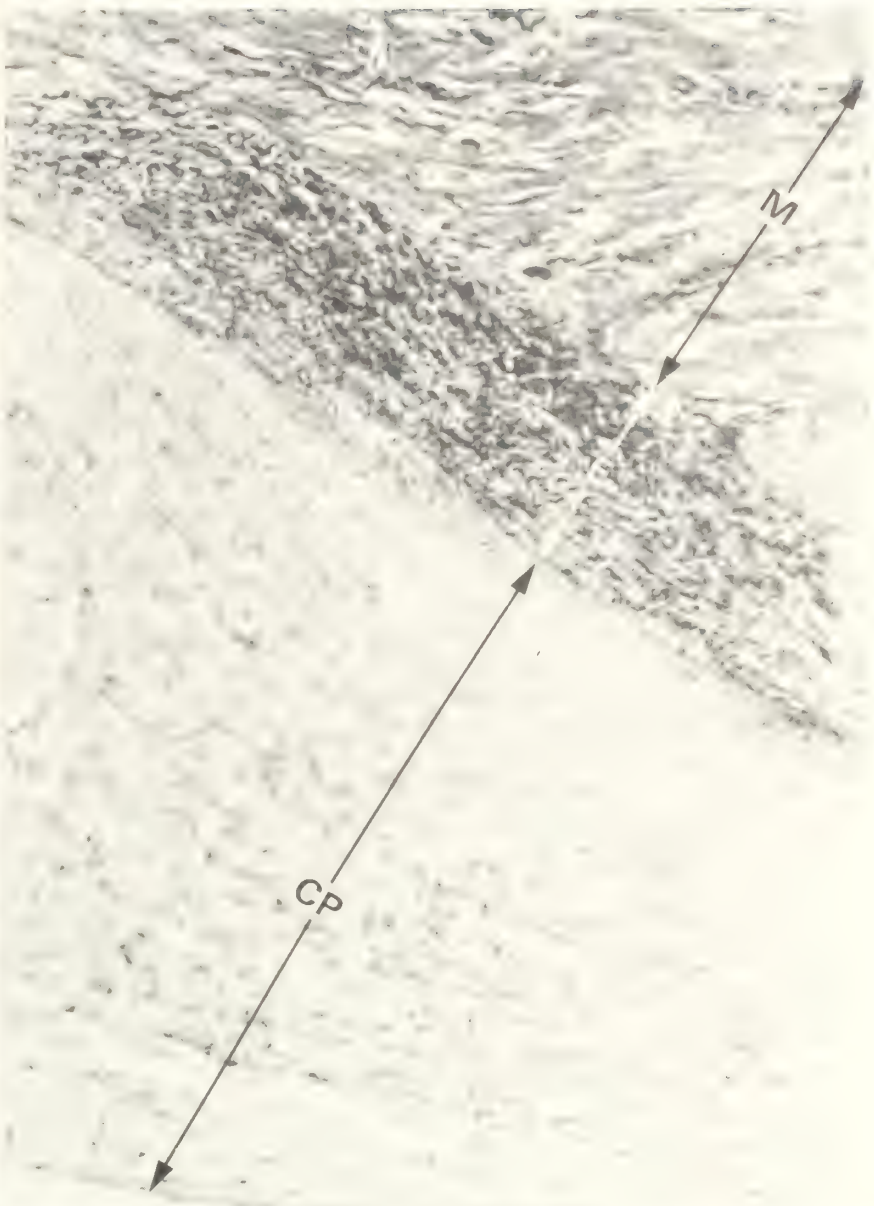


FIGURE 5: Photomicrograph of endocardial carcinoid plaque (CP) showing "coating" of the endocardium (E) without alteration or destruction of the underlying endocardium or myocardium (M). The carcinoid plaque consists of fibrous tissue free of elastic fibers with a groud substance containing acid mucopolysaccharides (hemotoxylin and eosin stain, x 160 magnification).

saccharide and collagen (*Figure 5*). The plaque material "coated" valvular and mural endocardium without extension into or destruction of underlying endocardial architecture.

Final Anatomic Diagnosis

1. Neuroendocrine carcinoma (carcinoid tumor) of the lung with primary site in lower lobe with metastases to lung, lymph nodes, liver, adrenal gland and spleen.
2. Islet cell tumor of pancreas.
3. Carcinoid heart disease producing tricuspid and pulmonic stenosis and chordae tendineae thickening of the mitral valve.

Dr. Waller: About 75% (range 60-90%) of the neuroendocrine (carcinoid) tumors arise in the vermiform appendix and the remaining 25% (range 10-40%) arise in other areas of the gastrointestinal tract (ileum, stomach, duodenum) and bronchus. Only carcinoid tumors invading the liver (*Figure 2*) result in "carcinoid heart disease" (*Figure 3*). Cardiac lesions result from large circulating quantities of 5-hydroxytryptamine and other vasoactive substances (histamine, kinin peptides) secreted by the tumor which ordinarily are inactivated by the liver and lungs. Metastatic involvement of the liver permits cardiac exposure to the toxic substances. The vast majority of patients with carcinoid heart disease have right-sided involvement only. Left-sided lesions (*Figure 4*) are rare but occur in the presence of intracardiac shunts (atrial septal defect), primary bronchial carcinoid tumors or from metastatic lung lesions invading pulmonary veins.

Cardiac abnormalities are observed in about 50% of patients with carcinoid syndrome. In carcinoid heart disease, plaque-like thickening occurs on valvular and mural endocardium, intima of great veins, coronary sinus, pulmonary trunk and right and left main pulmonary arteries. Functional valve lesions resulting from the anatomic valvular changes include tricuspid stenosis and/or regurgitation and pulmonic stenosis. When the tricuspid valve is involved, the plaque-like lesions characteristically occur on the *ventricular* aspects of posterior and septal leaflets and on the atrial and ventricular aspects of the anterior tricuspid leaflet. When the pulmonic valve is involved, carcinoid plaque deposition occurs primarily on the *arterial* aspect of the cusps. Left-sided

TABLE
Comparison of Carcinoid Heart Disease with Other Congenital and Acquired Heart Diseases

1. Principal Valve	Carcinoid	Rheumatic	Congenital PS	Congenital FE	Endomyocardial Fibrosis	Methylergide
Involvement:						
A. Mitral		+		0	+	+
B. Aortic		+		0		0/+
C. Tricuspid	+			0	+	
D. Pulmonic	+		+	0		
1. Endocardial						
Response:	+	0	0	+		
A. Thickening						
1. Fibrous tissue	+				+	+
2. Elastic tissue	0			+		

FE = fibroelastosis; PS = pulmonic stenosis

valvular involvement affects the ventricular aspects of the mitral leaflets, chordae tendineae, "capping" of the papillary muscles, and occasionally the arterial (aortic) aspect of the aortic valve.

Comparison of the cardiac lesions in carcinoid heart disease to that in other congenital or acquired cardiac diseases is summarized in the *Table*. *Carcinoid heart disease* primarily involves right-sided valves. In contrast, *rheumatic heart disease* always involves the mitral valve with occasional involvement of the aortic valves and tricuspid. Endocardial lesions are not characteristic of rheumatic heart disease. *Congenital pulmonic stenosis* has no endocardial plaque lesions and the valvular thickening consists of both arterial and ventricular alterations. In addition, underlying cusp tissue is abnormal.

Congenital fibroelastosis has endocardial thickening but is histologically distinctive from the carcinoid plaque by the predominance of elastic fibers. Congenital fibroelastosis mainly involves left-sided chambers. In *endomyocardial fibrosis*, fibrosis begins in the ventricular apices and spreads toward and involves the atrioventricular valves (left-sided > right-sided, isolated right-sided involvement unusual) and spares the semilunar valves. Underlying myocardial involvement by fibrous tissue invasion is common.

In *methylsergide therapy*, the similarity of the plaque-like lesions to carcinoid heart disease is striking. A major difference between carcinoid and methylsergide heart disease occurs in the location of the lesions; carcinoid plaques are mainly right-sided and methylsergide plaques are mainly left-sided.

Needed: Asthma Patients

Dr. Debra Myers is conducting a 14-week outpatient study of asthma patients at Methodist Hospital, Indianapolis.

The purpose of the study is to test a new asthma medication produced by the Fisons Corp.

Asthma patients interested in participating must be between the ages of 18 and 70, and be using theophylline. To be accepted in the study, women must not be capable of childbirth.

If you have patients interested in this project, have them call Mary Ann Payne, R.N., at (317) 929-3609 between 9 a.m. and 3 p.m.

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Significantly reduced risk of endometrial hyperplasia

Endometrial hyperplasia was significantly reduced when progestin was added to PREMARIN therapy for more than ten days a month.[1-4] The risk of endometrial hyperplasia may also be reduced through cyclic administration of unopposed, low-dose PREMARIN.

Effect on lipids—an important feature

PREMARIN used alone does not adversely affect lipid levels. In fact, a clinical study has shown a significant increase in HDL cholesterol—from 49.7 mg/dL to 56.4 mg/dL—and decrease in LDL cholesterol—from 165.1 mg/dL to 138.1 mg/dL—after one year of therapy with PREMARIN, 0.625 mg.[1]

Low-dose control of menopausal symptoms*

PREMARIN effectively relieves vasomotor symptoms, such as hot flashes. When estrogen deficiency is limited to atrophic vaginitis, PREMARIN® (conjugated estrogens) Vaginal Cream restores the vaginal environment to its premenopausal state.

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Most trusted for more reasons

*PREMARIN is indicated for moderate-to-severe vasomotor symptoms.

Please see following page for brief summary of prescribing information.

For moderate-to-severe vasomotor symptoms

PREMARIN®
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0.3 mg 0.625 mg 0.9 mg 1.25 mg 2.5 mg

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For atrophic vaginitis

PREMARIN®
(Conjugated Estrogens)

Vaginal Cream

0.625mg/g



BRIEF SUMMARY *(FOR FULL PRESCRIBING INFORMATION AND PATIENT INFORMATION, SEE PACKAGE CIRCULARS.)*

PREMARIN® Brand of conjugated estrogens tablets, USP
PREMARIN® Brand of conjugated estrogens Vaginal Cream in a nonliquefying base

1. ESTROGENS HAVE BEEN REPORTED TO INCREASE THE RISK OF ENDOMETRIAL CARCINOMA

Three independent case control studies have reported an increased risk of endometrial cancer in postmenopausal women exposed to exogenous estrogens for more than one year. This risk was independent of the other known risk factors for endometrial cancer. These studies are further supported by the finding that incidence rates of endometrial cancer have increased sharply since 1969 in eight different areas of the United States with population-based cancer reporting systems, an increase which may be related to the rapidly expanding use of estrogens during the last decade. The three case control studies reported that the risk of endometrial cancer in estrogen users was about 4.5 to 13.9 times greater than in nonusers. The risk appears to depend on both duration of treatment and on estrogen dose. In view of these findings, when estrogens are used for the treatment of menopausal symptoms, the lowest dose that will control symptoms should be utilized and medication should be discontinued as soon as possible. When prolonged treatment is medically indicated, the patient should be reassessed on at least a semiannual basis to determine the need for continued therapy. Although the evidence must be considered preliminary, one study suggests that cyclic administration of low doses of estrogen may carry less risk than continuous administration; it therefore appears prudent to utilize such a regimen. Close clinical surveillance of all women taking estrogens is important. In all cases of undiagnosed persistent or recurring abnormal vaginal bleeding, adequate diagnostic measures should be undertaken to rule out malignancy. There is no evidence at present that "natural" estrogens are more or less hazardous than "synthetic" estrogens at equiestrogenic doses.

2. ESTROGENS SHOULD NOT BE USED DURING PREGNANCY

The use of female sex hormones, both estrogens and progestogens, during early pregnancy may seriously damage the offspring. It has been shown that females exposed in utero to diethylstilbestrol, a non-steroidal estrogen, have an increased risk of developing in later life a form of vaginal or cervical cancer that is ordinarily extremely rare. This risk has been estimated as not greater than 4 per 1,000 exposures. Furthermore, a high percentage of such exposed women (from 30% to 90%) have been found to have vaginal adenosis, epithelial changes of the vagina and cervix. Although these changes are histologically benign, it is not known whether they are precursors of malignancy. Although similar data are not available with the use of other estrogens, it cannot be presumed they would not induce similar changes. Several reports suggest an association between intrauterine exposure to female sex hormones and congenital anomalies, including congenital heart defects and limb reduction defects. One case control study estimated a 4.7-fold increased risk of limb reduction defects in infants exposed in utero to sex hormones (oral contraceptives, hormone withdrawal tests for pregnancy, or attempted treatment for threatened abortion). Some of these exposures were very short and involved only a few days of treatment. The data suggest that the risk of limb reduction defects in exposed fetuses is somewhat less than 1 per 1,000. In the past, female sex hormones have been used during pregnancy in an attempt to treat threatened or habitual abortion. There is considerable evidence that estrogens are ineffective for these indications, and there is no evidence from well controlled studies that progestogens are effective for these uses. If PREMARIN is used during pregnancy, or if the patient becomes pregnant while taking this drug, she should be apprised of the potential risks to the fetus, and the advisability of pregnancy continuation.

DESCRIPTION: PREMARIN (conjugated estrogens, USP) contains a mixture of estrogens, obtained exclusively from natural sources, blended to represent the average composition of material derived from pregnant mares' urine. It contains estrone, equilin, and 17α-dihydroequilin, together with smaller amounts of 17α-estradiol, equilenin, and 17α-dihydroequilenin as salts of their sulfate esters. Tablets are available in 0.3 mg, 0.625 mg, 0.9 mg, 1.25 mg, and 2.5 mg strengths of conjugated estrogens. Cream is available as 0.625 mg conjugated estrogens per gram.

INDICATIONS AND USAGE: PREMARIN (conjugated estrogens tablets, USP). Moderate-to-severe *vasomotor* symptoms associated with the menopause. (There is no evidence that estrogens are effective for nervous symptoms or depression without associated vasomotor symptoms and they should not be used to treat such conditions.) **Osteoporosis (abnormally low bone mass).** Atrophic vaginitis. Kraurosis vulvae. Female castration.

PREMARIN (conjugated estrogens) Vaginal Cream is indicated in the treatment of atrophic vaginitis and kraurosis vulvae. PREMARIN HAS NOT BEEN SHOWN TO BE EFFECTIVE FOR ANY PURPOSE DURING PREGNANCY AND ITS USE MAY CAUSE SEVERE HARM TO THE FETUS (SEE BOXED WARNING).

Concomitant Progestin Use: The lowest effective dose appropriate for the specific indication should be utilized. Studies of the addition of a progestin for 7 or more days of a cycle of estrogen administration have reported a lowered incidence of endometrial hyperplasia. Morphological and biochemical studies of the endometrium suggest that 10 to 13 days of progestin are needed to provide maximal maturation of the endometrium and to eliminate any hyperplastic changes. Whether this will provide protection from endometrial carcinoma has not been clearly established. There are possible additional risks which may be associated with the inclusion of progestin in estrogen replacement regimens. (See PRECAUTIONS.) The choice of progestin and dosage may be important; product labeling should be reviewed to minimize possible adverse effects.

CONTRAINDICATIONS: Estrogens should not be used in women (or men) with any of the following conditions: 1. Known or suspected cancer of the breast except in appropriately selected patients being treated for metastatic disease. 2. Known or suspected estrogen-dependent neoplasia. 3. Known or suspected pregnancy (See Boxed Warning). 4. Undiagnosed abnormal genital bleeding. 5. Active thrombophlebitis or thromboembolic disorders. 6. A past history of thrombophlebitis, thrombosis, or thromboembolic disorders associated with previous estrogen use (except when used in treatment of breast or prostatic malignancy).

WARNINGS: Long-term continuous administration of natural and synthetic estrogens in certain animal species increases the frequency of carcinomas of the breast, cervix, vagina, and liver. There are now reports that estrogens increase the risk of carcinoma of the endometrium in humans. (See Boxed Warning.) At the present time there is no satisfactory evidence that estrogens given to postmenopausal women increase the risk of cancer of the breast, although a recent study has raised this possibility. There is a need for caution in prescribing estrogens for women with a strong family history of breast cancer or who have breast nodules, fibrocystic disease, or abnormal mammograms. A recent study has reported a 2- to 3-fold increase in the risk of surgically confirmed gallbladder disease in women receiving postmenopausal estrogens.

Adverse effects of oral contraceptives may be expected at the larger doses of estrogen used to treat prostatic or breast cancer or postpartum breast engorgement; it has been shown that there is an increased risk of thrombosis in men receiving estrogens for prostatic cancer and women for postpartum breast engorgement. Users of oral contraceptives have an increased risk of diseases, such as thrombophlebitis, pulmonary embolism, stroke, and myocardial infarction. Cases of retinal thrombosis, mesenteric thrombosis, and optic neuritis have been reported in oral contraceptive users. An increased risk of postsurgery thromboembolic complications has also been reported in users of oral contraceptives. If feasible, estrogen should be discontinued at least 4 weeks before surgery of the type associated with an increased risk of thromboembolism, or during periods of prolonged immobilization. Estrogens should not be used in persons with active thrombophlebitis, thromboembolic disorders, or in persons with a history of such disorders in association with estrogen use. They should be used with caution in patients with cerebral vascular or coronary artery disease. Large doses (5 mg conjugated estrogens per day), comparable to those used to treat cancer of the prostate and breast, have been shown to increase the risk of nonfatal myocardial infarction, pulmonary embolism and thrombophlebitis. When doses of this size are used, any of the thromboembolic and thrombotic adverse effects should be considered a clear risk.

Benign hepatic adenomas should be considered in estrogen users having abdominal pain and tenderness, abdominal mass, or hypovolemic shock. Hepatocellular carcinoma has been reported in women taking estrogen-containing oral contraceptives. Increased blood pressure may occur with use of estrogens in the menopause and blood pressure should be monitored with estrogen use. A worsening of glucose tolerance has been observed in patients on estrogen-containing oral contraceptives. For this reason, diabetic patients should be carefully observed. Estrogens may lead to severe hypercalcemia in patients with breast cancer and bone metastases.

PRECAUTIONS: Physical examination and a complete medical and family history should be taken prior to the initiation of any estrogen therapy with special reference to blood pressure, breasts, abdomen, and pelvic organs and should include a Papanicolaou smear. As a general rule, estrogen should not be prescribed for longer than one year without another physical examination being performed. Conditions influenced by fluid retention such as asthma, epilepsy, migraine, and cardiac or renal dysfunction, require careful observation. Certain patients may develop manifestations of excessive estrogenic stimulation, such as abnormal or excessive uterine bleeding, mastodynia, etc. Prolonged administration of unopposed estrogen therapy has been reported to increase the risk of endometrial hyperplasia in some patients. Oral contraceptives appear to be associated with an increased incidence of mental depression. Patients with a history of depression should be carefully observed. Preexisting uterine leiomyomata may increase in size during estrogen use. The pathologist should be advised of estrogen therapy when relevant specimens are submitted. If jaundice develops in any patient receiving estrogen, medication should be discontinued while the cause is investigated. Estrogens should be used with care in patients with impaired liver function, renal insufficiency, metabolic bone diseases associated with hypercalcemia, and in young patients in whom bone growth is not complete. If concomitant progestin therapy is used, potential risks may include adverse effects on carbohydrate and lipid metabolism.

The following changes may be expected with larger doses of estrogen:

a. Increased sulfobromophthalein retention.

b. Increased prothrombin and factors VII, VIII, IX, and X; decreased antithrombin 3; increased epinephrine-induced platelet aggregability.

c. Increased thyroid binding globulin (TBG) leading to increased circulating total thyroid hormone, as measured by PBI, T4 by column, or T4 by radioimmunoassay. Free T3 resin uptake is decreased, reflecting the elevated TBG; free T4 concentration is unaltered.

d. Impaired glucose tolerance.

e. Decreased pregnanediol excretion.

f. Reduced response to metyrapone test.

g. Reduced serum folate concentration.

h. Increased serum triglyceride and phospholipid concentration. As a general principle, the administration of any drug to nursing mothers should be done only when clearly necessary since many drugs are excreted in human milk.

ADVERSE REACTIONS: The following have been reported with estrogenic therapy, including oral contraceptives: breakthrough bleeding, spotting, change in menstrual flow; dysmenorrhea; premenstrual-like syndrome; amenorrhea during and after treatment; increase in size of uterine fibromyomata, vaginal candidiasis, changes in cervical erosion and in degree of cervical secretion; cystitis-like syndrome; tenderness, enlargement, secretion (of breasts), nausea, vomiting, abdominal cramps, bloating; cholestatic jaundice; chloasma or melasma which may persist when drug is discontinued; erythema multiforme; erythema nodosum; hemorrhagic eruption, loss of scalp hair; hirsutism; steepening of corneal curvature; intolerance to contact lenses; headache, migraine, dizziness, mental depression, chorea; increase or decrease in weight; reduced carbohydrate tolerance; aggravation of porphyria, edema, changes in libido.

ACUTE OVERDOSAGE: May cause nausea, and withdrawal bleeding may occur in females.

DOSAGE AND ADMINISTRATION:

PREMARIN® Brand of conjugated estrogens tablets, USP

1. *Given cyclically for short-term use only.* For treatment of moderate to severe *vasomotor* symptoms, atrophic vaginitis, or kraurosis vulvae associated with the menopause (0.3 to 1.25 mg or more daily). The lowest dose that will control symptoms should be chosen and medication should be discontinued as promptly as possible. Administration should be cyclic (eg, three weeks on and one week off). Attempts to discontinue or taper medication should be made at three- to six-month intervals.

2. *Given cyclically:* Female castration. Osteoporosis. Female castration—1.25 mg daily, cyclically. Adjust upward or downward according to response of the patient. For maintenance, adjust dosage to lowest level that will provide effective control. Osteoporosis—0.625 mg daily. Administration should be cyclic (eg, three weeks on and one week off).

Patients with an intact uterus should be monitored for signs of endometrial cancer and appropriate measures taken to rule out malignancy in the event of persistent or recurring abnormal vaginal bleeding.

PREMARIN® Brand of conjugated estrogens Vaginal Cream

Given cyclically for short-term use only. For treatment of atrophic vaginitis or kraurosis vulvae.

The lowest dose that will control symptoms should be chosen and medication should be discontinued promptly as possible.

Administration should be cyclic (eg, three weeks on and one week off).

Attempts to discontinue or taper medication should be made at three-to-six month intervals.

Usual dosage range: 2 to 4 g daily, intravaginally, depending on the severity of the condition.

Treated patients with an intact uterus should be monitored closely for signs of endometrial cancer and appropriate diagnostic measures should be taken to rule out malignancy in the event of persistent or recurrent abnormal vaginal bleeding.

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Family Practice Residency Training

It Can be 'Far More Enjoyable Than You Ever Imagined'

The following paper was presented February 5, 1986 by Dr. Worthe Holt to the members of the Junior class of the Indiana University School of Medicine at the Annual Dinner sponsored by the Department of Family Medicine for those interested in family practice. When Dr. Holt is not involved in his residency activities he spends his time as a fighter pilot flying F-4 Phantom Jets for the Indiana Air National Guard. His wife Marie is currently a second year dental student at Indiana University.

A RECENT SURVEY conducted and published by the American Medical Association concluded that less than half of patients feel that their physicians spend enough time with them. Very few patients reported that their physicians explained things adequately, and a significantly small percentage of patients state that their physicians really care about them.[1]

That certainly is not how we like to perceive ourselves as physicians although there must be some truth in the statement. More and more, we are finding that despite the advent of HMOs, prepaid health care, and super specialization that patients want to be cared for by empathetic physicians who know them well and can care for the majority of their health problems.

Contrary to the belief of some people—including medical students—that family practitioners will be forced out of practice by limitation of procedures, privileges, malpractice insurance and economics, family practice is on the upswing. It is the answer to providing the personalized and comprehensive care that patients want. It is a most effective means for delivering preventive medicine and it allows us as physicians to improve and nurture the patient-physician relationship that has slowly faded by the wayside over the years.

I didn't start out in family practice. In fact, I never even considered it while I was in medical school. I can recall, and I continue to witness, the very slanted view one gets of family medicine at a major medical center. As a student, it was difficult to believe that one could learn to deal with the complex medical care arena and be competent in so doing. No, instead, I began in surgery. I liked surgery then and I continue to like it now but I had no flexibility.

I found during my undergraduate training and subsequently as a medical student that medical schools sought out individuals with wide backgrounds and diverse interests, only to place us all in compromising situations where we were forced to give up the things that made each of us unique. During my surgical internship I had little time for patients or myself, spending the bulk of my day dealing with specific surgical problems and numbers. Medicine became very impersonal. I missed the variety I had experienced previously during my junior year of medical school. As a medical student, I certainly preferred some areas over others, but in general, I enjoyed everything I did.

Following my surgical internship, I spent two years in the Air Force. I was involved in medicine on the side, staffing emergency rooms and evening clinics while pursuing a very different type of training as my primary job. Frequently, friends would ask me about their pregnant wives, sick children or ailing parents. I used to wish that they would ask me about an acute abdomen or a Bilroth II instead. I realized that up to that point I had given up nearly everything I spent so much time and worked so hard to learn as a student.

As time went by, I slowly relearned pediatrics, internal medicine and basic care that I had given up during my time in surgery. It took a great deal of reading and I had to ask a lot of questions. Nonetheless, I learned that I could really handle nearly everything presented. My self esteem increased and I found out that by being conscientious and, yes, compulsive, I could do a very good job. Patients appreciated the time I spent with them and I wasn't afraid or embarrassed to say that I didn't know with certainty what was wrong, if indeed that was the case.

It occurred to me that for the first time I was doing exactly what doctors are supposed to do. I was taking care of a multitude of medical problems, but first and foremost, I was taking care of people. Upon returning to the medical center to complete my training, I made a lateral move into the family practice residency program. I am far more pleased with myself as a physician now than I ever was previously.

Currently, I am on the pediatric service. The other day I was asked by the Chief Resident if I thought I could be competent as a physician caring for children. Not only do I think I can, I know I can from experience in the real world. No, I will not be as expert with certain complex pediatric problems, but I can take care of geriatrics better than he can, deliver babies better, con-

trol blood pressure better, and perform minor surgeries better. I am more adept at the use of a flexible sigmoidoscope. Nelson's Textbook on Pediatrics states that the average general practitioner will only see two children with cancer in a 45-year career.[2] That puts things in a little different perspective.

As I proceed from one rotation to another, I have been surprised and pleased at how often I have been able to contribute my knowledge in other areas of medicine. You learn quickly just how valuable your experience can become. Here at the medical center I am also able to keep up with the latest advances in medicine and their practical applications. This training is invaluable when it does become necessary to refer patients for more specialized care. Also, I have a great deal more flexibility and much better health.

Contrary to what we frequently hear, there are no significant limitations placed on family practitioners. You can do whatever you want to take the time to learn. The sky is the limit. I am doing it now, and I have been involved with it in Texas, New Mexico, Washington, Kansas and Florida. Community hospitals depend on family physicians for patients and will support you and extend you privileges as appropriate. Family physicians genuinely do hold the highest respect in their communities. Also, family medicine leaves all doors open. You can work in emergency medicine, in a private or group practice, industrial medicine, administration, consulting, research—the list is long. Family practice is stimulating, exciting, enjoyable and full of variety.

'Patients Want to Be Cared for by Empathetic Physicians Who Know Them Well and Care for the Majority of Their Health Problems'

If you are the least bit uncertain about your future career in medicine, I strongly recommend a transitional year, once called a rotating internship. This will give you an opportunity to sharpen your skills and increase your self confidence. Best of all—you won't close any doors on yourself.

Yes, family medicine is very challenging. I feel that family doctors in general are very intelligent and appropriately compulsive individuals. They tend to be better adjusted and more mature. They certainly do not burn out on things becoming too routine. Dealing purely with internal medicine for three months can make one very tired of adult asthmatics, but the occasional case mixed with other problems can be quite interesting and challenging. Despite the everyday problems we encounter as residents—the infiltrated IVs, the post bolus theophylline levels, and concern of parents—you will find that family practice residency training can be far more enjoyable than you ever imagined.

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Proceedings to be Published in January 1987

The proceedings of the 137th Annual Meeting of the House of Delegates, Indiana State Medical Association, will be published in the January 1987 issue of INDIANA MEDICINE.

The Annual Meeting, during which Dr. Shirley Thompson Khalouf of Marion assumed the presidency, was conducted Oct. 30 to Nov. 2 at the Hyatt Regency Indianapolis.

Our coverage will include the results of elections, convention photographs, an attendance roster of the House of Delegates, various annual reports and the actions taken on the approximately 50 resolutions that were considered this year.

CATCH-23

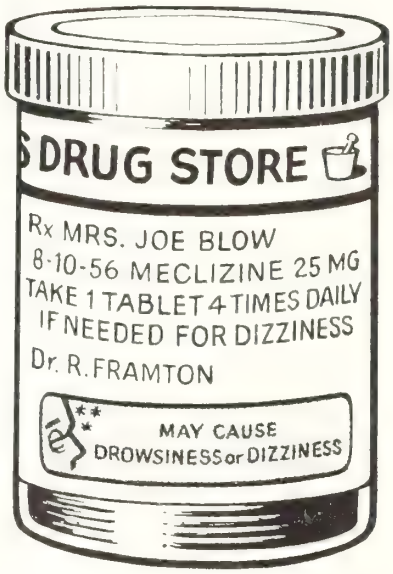
The Case of the Dizziness Dilemma

PHILIP BALL, M.D.
Muncie

SOME OF US who are literate remember the fabulous book by Joseph Heller entitled *Catch-22*. Let me remind you that in this crazy and wonderful novel, the men of the U.S. Air Force flying missions from their Mediterranean base to targets over Germany were constantly confronted with dilemmas or quandaries, that is, situations where you were damned if you did, and damned if you didn't.

The doctor of the imaginary Air Force base described in this book said that these dilemmas were outlined in military medical regulations. And, in fact, he said that one of these regulations (which he termed Catch 22), specified what to do in case a veteran pilot became anxious and fearful, and pleaded with the flight surgeon to take him off flying duty because he was too nervous to fly.

This regulation stated that if the pilot asked to be taken off flight duty, this showed that he was perfectly rational and had to continue flying.



Because anyone who wanted to fly multiple missions had to be crazy. On the other hand, any pilot who didn't ask to be relieved of this dangerous flight duty had to be crazy. But in order to be relieved of flight duty, he had to ask for it, and if he asked for it, this showed he wasn't crazy, and so on, and on and on.

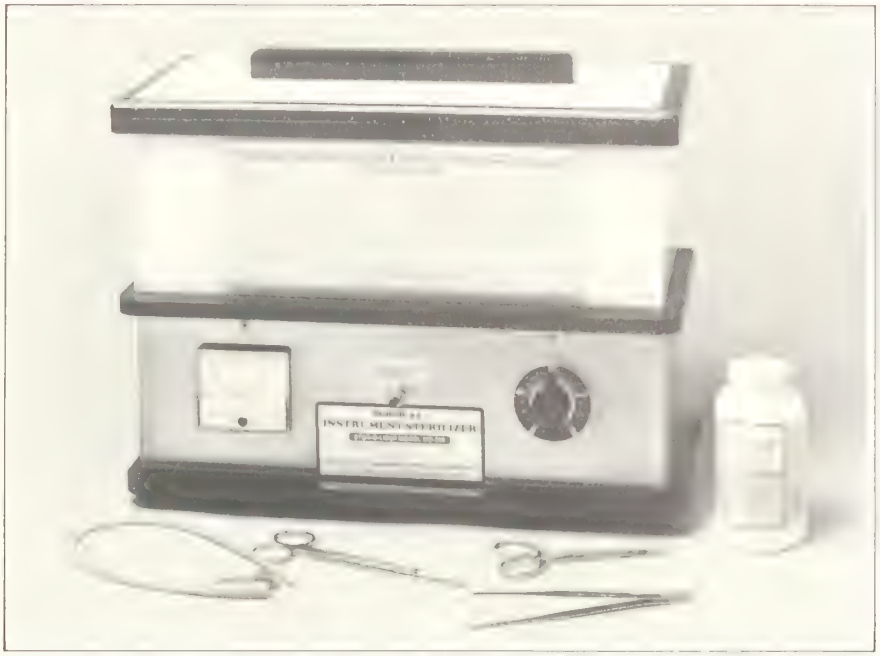
Well, "Catch-22" lives on, and just recently I encountered Catch-23. A young lady patient of mine had experienced an episode of vertigo while at work, and her employer transported her immediately to the local Emergency Room. While there, the emergency physician very properly identified the problem as that of a vestibular dysfunction, and prescribed the well-known medication Meclizine 25 mg. The patient promptly had this prescription filled at a local drug store.

The dizziness went away spontaneously before the patient took the first pill. The patient read the label on the prescription on arrival home, and took none of the pills, but came into my office the next day caught on the horns of the dilemma of Catch-23. The directions on her bottle of Meclizine clearly read, "Take 1 tablet up to 4 times daily if needed for dizziness." Unfortunately, the pharmacist had attached a little blue tag just below the prescription directions that read, "May cause drowsiness or dizziness."

So, my patient was afflicted with Catch-23. If she had dizziness, she was to take Meclizine, but the Meclizine might cause dizziness. My patient was no longer dizzy, but now because of this dilemma she was becoming nervous and apprehensive. My solution to the problem was to peel the little dumb blue tag off and throw it away. She left my office perfectly satisfied and asymptomatic.

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Review of Recent Supreme Court Decisions

High Court Rulings on Baby Doe, Medicare, Labor Unions

Court Condemns Boycott by Dentists of Third-Party Cost Containment Programs

In an unanimous decision, the United States Supreme Court has ruled that a purported labor union organized by Indiana dentists violated §1 of the Sherman Act and §5 of the Federal Trade Commission Act by agreeing to withhold x-rays from dental insurers. At issue was the effort of dentists to impede implementation of "alternative benefits" plans developed by dental health insurers to contain costs by limiting the insurer's payment obligation to the cost of the "least expensive yet adequate treatment" required. To evaluate the diagnoses and treatment plans recommended by treating dentists insurers requested submission of radiographs along with insurance claim forms. These were reviewed by lay examiners, who could grant but not deny claims, and by licensed dentists employed as consultants, who could recommend approval, denial, or payment for a less expensive alternative treatment.

Viewing such plans as a threat to their economic interests and professional autonomy, a number of dentists formed the Indiana Federation of Dentists (IFD) and promulgated a "work rule" forbidding members to submit x-rays in conjunction with insurance claim forms. Although IFD's total membership numbered fewer than 100 dentists, they were concentrated in the areas in which its three local chapters were located, and represented predominant majorities of the practicing dentists and dental specialists in two of the chapters' regions. In areas of its strength, the IFD was able to frustrate the introduction of alternative benefits insurance coverage.

The Federal Trade Commission (FTC) declined to find that the work rule was a *per se* illegal boycott. However, without undertaking an elaborate analysis of its impact on precisely defined relevant markets, the FTC held that the work rule unreasonably restrained trade because it reduced or eliminated "competition among dentists as to their policy of dealing with third-party payers." *In re Indiana Federation of Dentists*, 101 F.T.C. 57,173 (1983). The FTC rejected, as factually unsupported, IFD's claim that the work rule's anticompetitive effect was justified by a need to protect the quality of dental services. Notwithstanding its allegation that reliance on x-rays alone to determine an adequate treatment plan undermined quality, the IFD offered no evidence that any patients had been harmed by alternative benefits determinations, or that actual determinations had been medically erroneous. 101 F.T.C., at 177.

On appeal, the Seventh Circuit held that the FTC's findings of fact regarding a violation of the rule of reason were not supported by "substantial evidence" showing that the three Indiana localities having IFD chapters constituted distinct geographic markets or that Indiana dentists "do in fact compete with one another in their policy of dealing with group dental health care insurers." *Indiana Federation of Dentists v. FTC*, 745 F.2d 1124, 1141 (7th Cir. 1984). The court repeatedly described the dentists' activities as adherence to the "legal, moral and ethical policy of quality dental care."

In reversing the judgment and sustaining the FTC's final order, the Supreme Court agreed with the Commission that the IFD's own documents, as well as common sense and economic theory, provided evidence that dentists' willingness to cooperate with insurers' cost-containment programs was an element of competition among dentists that was affected adversely by their collusive behavior.

Dentists' 'Work Rule' Had Forbidden Members to Submit X-Rays with Insurance Forms

The Court also agreed that the work rule, while factually similar to a group boycott, did not merit *per se* condemnation. However, the anticompetitive effects of the IFD's practices were sufficiently apparent on their face to warrant an abbreviated rule of reason scrutiny. By withholding x-rays, dentists deprived consumers (patients and insurers) of the information they desired to make informed choices regarding the cost justification of proposed courses of treatment. While this was not price-fixing, as such, the agree-

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ment's obviously anticompetitive character was manifested by its tendency to reduce the effectiveness of competition as a mechanism for allocating resources in response to consumer preferences. In light of the work rule's anticompetitive character, the Seventh Circuit erred in requiring proof of economic power in a rigorously defined relevant market. In any event, the FTC's findings of "actual sustained adverse effects on competition in those areas where IFD dentists predominated, viewed in light of the reality that markets for dental services tend to be relatively localized, is legally sufficient to support a finding that the challenged restraint was unreasonable even in the absence of elaborate market analysis," the court said.

Turning to the question of justification, the Court pointed out initially that the IFD had advanced no credible argument that there were countervailing procompetitive virtues associated with its policy. The issue framed by the IFD was whether the FTC erred in failing to consider, as relevant to its rule of reason analysis, "noncompetitive" quality of care justifications for the work rule. The IFD's argument was that predetermination of benefits dependent solely on review of x-rays would lead insurers to cut costs through selection of inadequate or inferior treatment.

The Court held that the IFD's purported quality of care justification was flawed both legally and factually. First, "precisely the same justification for withholding information from customers was rejected as illegitimate" in *National Society of Professional Engineers v. United States*, 435 U.S. 679 (1978), because it rested on the premise that "an unrestrained market in which consumers are given access to the information they believe to be relevant to their choices will lead them to make unwise and even dangerous choices." Inasmuch as the IFD's defense was based on the implicit assumption that competition disserved the public interest in provision of quality dental care, it conflicted with the basic policy underlying the Sherman Act and could not be countenanced under the rule of reason.

Furthermore, the FTC did consider the IFD's quality justification but properly concluded that the IFD had not introduced evidence sufficient to sustain it. Denial or limitation of benefits on the basis of x-rays could occur only at the instance of dental consultants exercising professional judgment. The Court concluded, therefore, that such "careful use of x-rays as a basis for evaluating insurance claims" was not shown to be "destructive of proper standards of dental care."—*Federal Trade Commission v. Indiana Federation of Dentists*, 106 S.Ct. 2009 (U.S.Sup.Ct., June 2, 1986)—*William J. Tabor, J.D., Director, Medicolegal Affairs Division, AMA.*

'Baby Doe' Regulations Are Ruled Invalid

In a five to three decision, the U.S. Supreme Court affirmed the judgment of the U.S. Court of Appeals for the Second Circuit that the Final Rules promulgated on January 12, 1984, to establish "Procedures relating to health care for handicapped infants" are invalid. The authority of the Secretary of the U.S. Department of Health and Human Services to promulgate the Rules under §504 of the Rehabilitation Act of 1973 were challenged by the American Medical Association, the American Hospital Association and several other organizations and individual physicians. Section 504 provides, in part: "No otherwise qualified handicapped individual ... shall, solely by reason of his handicap, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." 29 U.S.C. §794.

Justice Stevens, joined by Justices Marshall, Blackmun, and Powell, wrote the plurality opinion in which Chief Justice Burger concurred. Justice Stevens characterized the issue before the court as a challenge to four mandatory components of the Rules: (1) posting in hospitals of the informational notice stating that §504 prohibits discrimination on the basis of handicap;

DHHS Can't Interfere in Treatment Decisions Made on Behalf of Handicapped Infants

(2) imposing responsibilities on recipient state child protective services agencies to prevent instances of unlawful medical neglect of handicapped infants; (3) hospitals providing immediate access to patient records on a 24-hour basis with or without parental consent; and (4) expedited compliance actions when in the judgment of the responsible official in the U.S. Department of Health and Human Services immediate action to effect compliance is necessary to protect the life or health of a handicapped individual.

Justice Stevens addressed three contentions in the plurality opinion. First, the absence of parental consent to treatment that results in a hospital withholding treatment is not discrimination in violation of §504 because the infant is not "otherwise qualified" for treatment nor "denied care solely by reason of handicap." This means that the Final Rules are not necessary "because the supposed need for federal monitoring of hospitals' treatment decisions rests entirely on instances in which parents have refused their consent."

The second contention addressed was the traditional role of the state government and the regulatory provision authorizing the Secretary "to commandeer state agencies to enforce compliance by other recipients of federal funds (in this instance hospitals) ... they may not be conscripted against

their will as the foot soldiers in a federal crusade."

The final portion focuses on the need for an evidentiary basis for agency action. The majority opinion made clear that Congress had failed to indicate "that it envisioned federal superintendence of treatment decisions traditionally entrusted to state government." The Secretary's action and remarks "make irresistible the inference that the Department regards its mission as one principally concerned with the quality of medical care for handicapped infants rather than with the implementation of §504," according to the majority. Enforcement of §504 to prevent discrimination and not affirmative action programs is the appropriate role of the Department, according to the opinion, and the administrative record is devoid of any examples or findings of discrimination based upon handicap.

Justice White joined by Justice Brennan dissented, stating that the issue before the Court was whether the Secretary "has any authority under the Act to regulate medical treatment decisions concerning handicapped newborn infants." Justice White, after concluding that the lower court's holding was incorrect, would have remanded the case to the Court of Appeals.

In a short separate dissent, Justice O'Connor agreed with parts of the dissent but saw no need to remand the case at this time.—*Bowen v. American Hospital Association*, 106 S.Ct. 2101 (U.S.Sup.Ct., June 9, 1986)

Comment

For the third time, the Federal Government has failed to win court agreement that §504 of the Rehabilitation Act of 1973 authorizes the Secretary of HHS to interfere in medical treatment decisions made on behalf of severely defective newborns. (The other two suits were *American Academy of Pediatrics v. Heckler*, 561 F.Supp. 395 (1983) and *United States v. University Hospital*, 729 F.2d 144 (1984). As Justice Stevens said: "... nothing in the statute authorizes the Secretary to dispense with the law's focus on discrimination and instead employ federal resources to save the lives of handicapped newborns, without regard to whether they are victims of discrimination by recipients of federal funds or not. Section 504 does not authorize the Secretary to give unsolicited advice either to parents, to hospitals, or to state officials who are faced with difficult treatment decisions concerning handicapped children."

Although the Supreme Court narrowly construed the issues in this case finding it unnecessary to decide whether §504 may ever apply to individual treatment decisions involving handicapped infants, the Secretary should have heard clearly why the decision should be made first by parents relying upon the advice of physicians and other councillors, and then by state governmental agencies charged with protecting infants and children from medical neglect.—*B. J. Anderson, J.D., Associate General Counsel, AMA*

Medicare Specialty Fee Screens Rejected

On June 9, the United States Supreme Court rejected the Medicare policy in Michigan which treats non-board certified family practitioners differently from other physicians for purposes of prevailing charge screens. *Bowen v. Michigan Academy of Family Physicians*, 106 S.Ct. 2133. While dealing only with Michigan, the ruling brings into question separate charge screens in other states. Additionally, the decision affirms that Medicare regulations are subject to challenge and review in the courts.

The suit was brought by the Michigan Academy of Family Physicians against Blue Cross and Blue Shield of Michigan (BC/BSM), the Medicare carrier, and the Department of Health and Human Services (HHS). It was claimed by the Academy that the carrier had acted in violation of both the Medicare Act and the due process and equal protection clauses of the U.S. Constitution when it established separate prevailing charge screens based on the specialty status of physicians. The Academy prevailed in both the federal district court and the court of appeals. In appealing to the Supreme Court, HHS argued only on the issue of jurisdiction. The Supreme Court held that federal courts do have jurisdiction to review this kind of regulation, thus affirming also the substantive decisions of the lower courts.

Under the Act, Medicare will pay 80% of the reasonable charge for a covered service. A "reasonable charge" is defined as the lower of the physician's actual charge, the physician's customary charge for the service, or the prevailing charge for the service in the locality. 42 U.S.C. §1395u(b)(3). Each carrier that administers Medicare is responsible for determining customary and prevailing charges. At issue in this case was the prevailing charge component determined by BC/BSM.

The Academy asserted a conflict between the Medicare Act and the HHS regulation permitting carriers to adopt separate specialty screens. The Act states simply that in determining reasonable charges, Medicare shall consider "the prevailing charges in the locality for similar services." 42 USC §1395u(b)(3). In 1967, apparently to reflect both the marketplace and different approaches to a service, Medicare adopted a regulation which allows carriers to establish separate prevailing charges for specialists. 42 CFR §405.504(b). The decision of a carrier in this regard is to be in accord with the existing pattern of charges in the locality. Under this regulation, different carriers around the country adopted a variety of separate charge screens based on specialty.

In Michigan, as revised in 1973, physicians were categorized into three screens based on specialty: 1) general practitioners, non-board certified family practitioners (including board

eligible family practitioners), chiropractors, podiatrists, and dental surgeons, 2) internists, board certified and non-board certified, for inpatient hospital services only, 3) other specialists, board certified and non-board certified, including board certified family practitioners. Once placed in a screen, all billings by the physician are subject to that screen's prevailing charge limitation for a particular service. As shown by the district court for office visits, which account for a substantial portion of Medicare billings, there can be significant differences in the prevailing charge for a service depending on the categorization of the physician.

At Issue Was the Local Prevailing Charge Component Determined by BC/BS of Michigan

In 1980, the US district court ruled in favor of the Academy. 502 F Supp 751 (ED Mich 1980). It held that the Medicare Act requires that all physicians performing "similar services" must be treated the same for purposes of prevailing charge screens. Therefore, the regulation authorizing different treatment of physicians providing the same service is in conflict with the Act.

The court noted additionally that there had been a failure by BC/BSM to comply with the regulation as written. As stated above, the regulation requires a statistical basis for establishing separate screens. No such studies had been done, according to the court, and it could find no factual basis for the three-part categorization of physicians.

The district court also found other conflicts between the regulation and the Medicare Act. Congress intended that the Act should not control the practice of medicine or the selection of physicians by patients. By allowing prevailing charges to be higher for some physicians than for others, the regulation could encourage a patient to go to a specialist, according to the court. Those patients unaware of the different screens would be affected because they could receive a lower reimbursement if they went to a physician in the nonspecialist screen. The court gave an example of a patient—paying the same premium as all other Medicare recipients—receiving substantially less reimbursement because of the screen of her physician.

Based on the above reasons, the district court concluded:

> Such segregation (of non-board certified family practitioners) is not rationally related to any legitimate purpose of the Medicare statute. To lump MDs who are family physicians, but who have chosen not to become board certified family physicians for whatever motive, with chiropractors, dentists, and podiatrists for the purpose of determining Medicare reimbursement defies all reason.

Because the court found the regulation allowing separate screens in conflict with the statute, it declined to rule on the constitutional argument.

In 1984, the Court of Appeals for the Sixth Circuit upheld the district court, 728 F2d 326 (6th Cir. 1984), elaborating on the "pernicious impact" of separate screens. The appellate court agreed with the testimony of former HEW Secretary Califano who pointed to a "severe inflationary impact" of the regulation. The court also stated that greater reimbursements for specialists created incentives for physicians to enter specialty practice rather than primary care and to over-utilize technology.

The appellate court disagreed with the district court, however, in its remand. The district court had ordered Medicare to place all physicians into a single screen. The court of appeals limited this. It revised the remand simply instructing Medicare officials to study the problem and consider similar services in an equal manner regardless who performs the service.

On appeal to the Supreme Court, the Secretary of HHS challenged only the lower courts' jurisdiction to rule on the regulation. HHS did not appeal the merits of the decision invalidating the regulation. The Secretary argued that Congress had intended to exclude judicial review of this kind of regulation when it delegated to the carriers the review of amounts of benefits payable under Part B of Medicare.

The Supreme Court rejected the Secretary's arguments. Citing *Marbury v. Madison* as well as more recent cases, the court stated there is a strong presumption that Congress intends judicial review of actions by the administrative agencies. The reason for the presumption is simply that the agencies must be accountable. In this regard, the court cited a 1945 Senate Committee:

Medicare Must Consider Similar Services in an Equal Manner Regardless of Who Performs Them

> Very rarely do statutes withhold judicial review. It has never been the policy of Congress to prevent the administration of its own statutes from being judicially confined to the scope of authority granted or to the objectives specified. Its policy could not be otherwise, for in such a case statutes would in effect be blank checks drawn to the credit of some administrative officer or board.

To overcome the strong presumption of the availability of judicial review of administrative agency action, the Court stated there must be clear and convincing statutory language or legislative history. Such a showing was not made by the Secretary in this case. By making this ruling, the decision and

remand to Medicare by the court of appeals was upheld.

An *amicus curiae* brief supporting the argument for jurisdiction was submitted by the American Medical Association in this case.

The three opinions in this case were concerned with various legal principles. The underlying factual issue was the problem of "similar services," and while this issue has not been without debate in the medical community, it was avoided by these courts. From the few comments that were made, it is apparent that the term "similar services" was construed to mean all services designated under the same procedural code number, and the statute was construed to require equal payment for all physicians performing services under that code number. This was the position of the Academy which stated that besides being no statutory basis for different payments, there was also no professional or statistical basis. An opposing view was stated in an *amicus curiae* brief of the American Society of Internal Medicine. While not supporting the categorization of the Michigan screens and not opposing jurisdiction, the ASIM argued that there is abundant data showing that all services falling under the same procedural code number are not necessarily the same: because of differences in training and skills, services provided by internists will on the average involve older patients, more serious problems, and more time. However, the order of the court of appeals, now affirmed by the Supreme Court, simply tells Medicare to "consider similar services in an equal manner regardless of who performs that service." Medicare can now either require single screens or perhaps a new method of differentiation in accord with the courts' rulings. A final question of interest is the effect of this case, if any, should Medicare adopt a new system of reimbursement such as a relative value scale.—*Henry R. Arkin, J.D., Staff Attorney, Health Law Division, AMA*

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MAUDY WAS a beloved employee of the old Indianapolis City Hospital back in the days when 85 to 90% of the hospital's care was administered to indigent people. Due to her tremendous size—she was about 6 feet tall and weighed about 290 pounds—Maudy was a rather obvious and prominent member of the staff.

She had a constantly pleasant disposition, a huge smile, and a hypertension that hovered around the 300 millimeter level in spite of the attempts of generation after generation of young interns and residents to alleviate this potentially dangerous condition.

Attempts had been made to place Maudy on diets and control medications for a good many years. Finally, one of the staff physicians suggested that, with the blessing and guidance of the resident in medicine, a member of the Dietary Department should take over Maudy's problem and really make an effort to rehabilitate her medical status and her extreme hypertension.

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THE DIET

Maudy was probably not a totally well educated client as she seemed to enjoy life a little more than she appreciated the necessities of her own personal health care. One of the dietitians suggested that, since she had not been able to count calories or to control her own dietary intake with any degree of success at all, it might be wise to write out a diet listing only the foods that she could be permitted at each meal time.

This meant that the diet would list a breakfast consisting, for example, of a hard-boiled egg, a slice of dry toast, 3 ounces of orange juice and a cup of black coffee. The noon meal would consist of a tossed salad with a vinegar dressing, a small serving of cottage cheese, a tablespoon of tuna without oil—and similar daily programs of dietary foods.

The diet list was typed in duplicate so she could have one at home and one at the hospital when working. Everybody became interested in Maudy's progress and our estimated speed of her weight loss. This diet list covered a 30-day period.

At the end of 30 days, Maudy reported to the clinic and, much to our consternation and disgust, she had gained four pounds.

We asked her if she'd followed the diet and the written instructions that she was to eat only those things listed. In fact, the instructions stipulated that if she didn't have a specified item in her home on a particular day, she was to skip it and not eat it at all.

Maudy insisted that she had followed the directions.

Finally, the resident doctor had a flash of brilliance. He asked, "Maudy, did you eat these at breakfast, lunch and dinner as the diet program suggested?" And Maudy confided that she certainly did. She ate them at breakfast, at lunch and at dinner, exactly as specified on the menu—right before her meals!

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BOOK REVIEWS

Mental Disability in America Since World War II

By Don Martindale and Edith Martindale. Copyright 1986, Philosophical Library, Inc., 200 W. 57th St., New York, N.Y. 10019. 295 pages, hardcover, $15.

The authors—he a sociologist and she a registered nurse—have written many books separately. They have joined forces to document changes in the management of mental illness in the past 40 years. In this book are discussed the history of psychiatric disorders, alcoholism and other drug addictions, community formation, mental institutions, and the ideological and governmental intrusions they have seen in those spheres.

They provide much information, but too often they provide it badly. Their early pages are their worst—in sentence structure, content of thought, and definition of concepts. Later chapters are better written but bear the heavy weight of editorial attitudes. The authors do not think "de-institutionalization" of the mentally ill was a good thing as carried out in the United States. They note the tremendous financial investment we have made in decentralization and worry that nothing is left for a counter trend even if it were deemed wise. They record the political, economic, and medicinal realities, but they are displeased with the results. The depth of their feelings and the tenor of their arguments left this reviewer uneasy with their protestations.

The movement of mentally ill patients from large mental hospitals to smaller community centers nearer their homes and the requisite trend to outpatient care were bold steps made possible by the availability of better psychotropic drugs. The commissioner of the Indiana Department of Mental Health recently reported that the population of Indiana state mental hospitals decreased from 13,000 in 1969 to 4,300 today. Physicians see the shortcomings of the new system daily, but they also see the benefits to patients, their families, and their communities when people receive their care at home. Few would wish for a return to the previous system.

The authors of *Mental Disability in America since World War II* have mustered the historical facts, but their pessimistic appraisal of the future provides no framework for continuing improvement in the health care of our friends and neighbors and patients with mental and emotional illnesses.—**Thomas J. Conway, M.D., Terre Haute**

Control Your High Blood Pressure Without Drugs

By Cleaves M. Bennett, M.D., with Charles Cameron. Copyright 1986, Doubleday & Co., Inc., New York. 392 pages, softcover, $9.95.

Self-help in medical matters and the concept of "wellness" are in vogue today, probably both from the consumerist movement and the high cost of being sick in today's world. This softcover manual attempts to teach such ideals for the relief of hypertension. The author is a genuine specialist in internal medicine who apparently lives the concepts he extols in his book.

There are all of 30 chapters (how do these authors find the words to clothe their ideas at such length?) and several appendices and an index. In 12 weeks the reader, if he follows the directions for diet, exercise and relaxation, should have a lower blood pressure without the use of any drugs. Insofar as blood pressure relates to anxiety, sedentary life and nervous tension, the author states that it will go down. He is an ethical doctor and makes no nonscientific claims. The keystone of his regimen is largely based on the Pritikin diet of low fat and yet lower sodium ingestion. Another integral facet in this treatment is the ever-popular aerobic exercise. Personally, I believe it all implicitly although I can picture a thin, relaxed and physically active hypertensive patient who would continue to need medication regardless of anything else.

This book teaches intelligent living and is worthwhile on that basis alone. There is a tiny niggling idea in my mind though that the Pritikin diet is a form of starvation. I wonder if emaciated concentration camp victims have much trouble with hypertension?

Please read this book. You will be a better person because of it.—**Rodney A. Mannion, M.D., LaPorte, Ind.**

Matthew Bender & Co. has released a new book, *Managing Your Medical Practice.* The author is Charles R. Wold, chief executive officer of Professional Consulting Group, Inc. The book is useful for those starting new practices and also for physicians who need to reorganize the office for more efficient use. Covered are staff recruiting, telephone answering, appointment systems, patient records, computers, financial management, credit and collections, insurance, pension and retirement plans and Medical Practice Law. $80.

Florence Nightingale Jones, the nurse featured in cartoons by Thelma and Laura Canarecci ("TLC"), is the center of attention in *Tender Loving Comedy,* recently released by TLC Books, P.O. Box 1391, Mishawaka, Ind. 46544. Many TLC cartoons have appeared in INDIANA MEDICINE over the years. The softcover book contains nearly 100 cartoons depicting the humor in nurses' training and beyond. $5.95.



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AUXILIARY REPORT

Alfrieda Mackel (Mrs. Frederick)
ISMA Auxiliary President 1986-87

On November 20, 1986, public attention will be focused on cigarette smokers from coast to coast. It will be the Tenth Anniversary of the Great American Smokeout, an upbeat, good-natured, one-day campaign to encourage smokers to quit smoking for 24 hours—just to prove they can do it.

The idea was conceived by the American Cancer Society, which insists that anyone who can live without a cigarette for 24 hours, can quit forever.

No one is born with the craving to smoke. A child raised in a home where one or more parent smokes has a higher rate of upper respiratory infections. Statistics show that children of smoking parents are twice as likely to smoke as children of non-smoking parents. A tragically high number of people die in early middle-age of cigarette-related diseases. Parents who care about their children should seriously consider quitting smoking.

The physician plays a key role in helping smokers quit. A recent Gallup Survey reveals that 71% of cigarette smokers, who smoked a pack a day or more, would quit if their physician urged them to do so. The American Cancer Society's Great American Smokeout has a *Physician's Help Quit Kit* that gives doctors the necessary information to help them persuade their patients who smoke to quit. The *Help Quit Kit* serves two purposes, helping to enlist doctors in a nationwide program to reduce cigarette-caused disability and death, and providing doctors with a plan and supporting materials to assist them in helping their patients to quit smoking.

Included in the kit are waiting room and desk top signs, "Smoker" chart labels, "Quit Smoking" prescription pads, posters, and patient literature. The kit is designed so that it can be tailored for use by a pediatrician, obstetrician/gynecologist, or family practitioner by the addition of appropriate posters and brochures. Physicians are encouraged to refer their patients to community resources such as the American Cancer Society's FreshStart (quit smoking) Clinics. Among smokers who do quit, significantly more FreshStart participants (37%) were still not smoking one year later than those who tried to quit unaided (18%).



What better time to encourage patients who smoke to quit than during the Great American Smokeout on November 20? It is the hope of the American Cancer Society that smokers who can stop smoking for 24 hours will choose to stop forever.

Smokeout 1985 set an all-time record for participation in the day-long event. More than 23 million of America's 54 million smokers tried to kick the habit for the day. Surveys show that 85% of smokers would like to quit. A great many have tried to quit at least once. The goal of the 1986 Tenth Annual Great Amerian Smokeout is to get one in every five smokers to give up cigarettes for 24 hours.

Although the Great American Smokeout is sponsored by the American Cancer Society, other organizations, hospitals, schools, businesses, and health agencies, including the American Medical Association and the Indiana State Medical Association, will join in the nationwide effort to encourage smokers to kick the habit.

Physicians in Indiana can participate by utilizing the materials offered in the *Help Quit Kit* made available to all physicians from the American Cancer Society. If you do not receive one, call your local unit of the American Cancer Society and they will mail or deliver one to you. Posters, brochures, and other materials to encourage your patients to quit smoking cigarettes and using other tobacco products are available upon request.

Together we are working toward a tobacco free society by the year 2000.—**Sylvia Scheeringa, Fort Wayne, ISMA-A Health Projects Chairman**



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CME QUIZ

TO OBTAIN ONE HOUR OF CATEGORY 1 AMA CME CREDIT, answer the following questions by circling the correct answer on the answer sheet below. Complete and clip the application form and mail it to: Indiana University School of Medicine, CME Division, BR 156, 1226 W. Michigan St., Indianapolis 46223.

Meniere's Disease

CONTINUED FROM PAGES 961-965

1. The major disadvantage of labyrinthectomy in the control of vertigo is:
   a. Loss of residual hearing.
   b. Damage to the semicircular canals.
   c. Risk of facial nerve injury.
   d. Persistent labyrinthine nystagmus.

2. The audiogram in Meniere's disease may demonstrate:
   a. Low-tone sensorineural hearing loss.
   b. Flat sensorineural hearing loss.
   c. Fluctuant hearing loss.
   d. All of above.

3. Acoustic neuromas rarely cause acute vertigo because:
   a. Schwann cells do not carry vestibular impulses.
   b. The tumor slowly destroys vestibular function.
   c. The vestibular nuclei are spared.
   d. Hearing loss is the predominant symptom.

4. Which is not a symptom of Meniere's disease?
   a. Episodic vertigo.
   b. Tinnitus.
   c. Idiopathic sensorineural hearing loss.
   d. Loss of consciousness.

5. All are characteristics of the hearing loss in Meniere's disease except:
   a. Recruitment.
   b. Diplacusis.
   c. Fluctuation.
   d. Anacousis.

6. Which medication is most effective in reducing vestibular activity?
   a. Dyazide.
   b. Dramamine.
   c. Diazepam.
   d. Vitamin D.

7. Streptomycin therapy is appropriate in Meniere's disease under which conditions?
   a. Mild unilateral involvement.
   b. Bilateral end-stage disease.
   c. When tuberculosis is concurrently treated.
   d. Bilateral conductive hearing loss.

8. The histopathologic correlate of Meniere's disease is:
   a. Inner ear granulomas.
   b. Vasculitis.
   c. Endolymphatic hydrops.
   d. Cochlear osteoneogenesis.

9. Which surgical procedures preserve residual hearing?
   a. Labyrinthectomy
   b. Endolymphatic shunt.
   c. Middle fossa vestibular nerve section.
   d. Retrolabyrinthine vestibule nerve section.

10. What percentage of patients with Meniere's disease can be expected to be controlled without surgical treatment?
    a. 10%
    b. 20%
    c. 50%
    d. 80%

OCTOBER CME QUIZ Answers

Following are the answers to the CME quiz that appeared in the October 1986 issue: "Home Oxygen Therapy for Infants and Children," by Deborah C. Givan, M.D., and Patsy Wylie, R.R.T.

1. d	6. c
2. c	7. c
3. b	8. a
4. d	9. d
5. b	10. b

Answer sheet for Quiz: (Meniere's Disease)

1. a b c d	6. a b c d
2. a b c d	7. a b c d
3. a b c d	8. a b c d
4. a b c d	9. a b c d
5. a b c d	10. a b c d

I wish to apply for one hour of category 1 AMA Continuing Medical Education credit through the I.U. School of Medicine. I have read the article and answered the quiz on the answer sheet above. I understand that my answer sheet will be graded confidentially, at no cost to me, and that notification of my successful completion of the quiz (80% of the questions answered correctly) will be directed to me for my application for the Physician's Recognition Award of the American Medical Association. I also understand that if I do not answer 80% of the questions correctly, I will not be advised of my score but the answers will be published in the next issue of INDIANA MEDICINE.

Name (please print or type)

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Signature

To be eligible for this month's quiz, send your completed, signed application before Dec. 10, 1986 to the address appearing at the top of this page.

NEWS NOTES

JCAH to Focus on Defining, Measuring Quality of Health Care

Dr. Dennis O'Leary, the new president of the Joint Commission on Accreditation of Hospitals, has unveiled a major campaign to evaluate the quality of health care services. O'Leary's plans call for the inclusion of clinical outcome measurements in the processes used by the Joint Commission to survey and accredit health care organizations.

For the first time in its history, the Joint Commission is developing severity-adjusted measurements of clinical outcomes. "From now on," Dr. O'Leary said, "our accreditation activities will focus on helping facilities improve the effectiveness of their quality assurance systems in monitoring and evaluating the most important indicators of the quality of clinical care they provide."

O'Leary refers to these plans as the key to the future success of the health professions' efforts to preserve the quality of health care available to the American public. Speaking to other practitioners, O'Leary said, "We now have the fundamental knowledge and methodology necessary to begin to define and measure the quality of care you provide, and the Joint Commission is going to help you do it. If we don't, others will, and the probability that they will misinterpret the results of their efforts is too high. This could have major negative ramifications for health policy in this country and, more importantly, for the quality of care available to the American people. And we have a compelling professional obligation to do it ourselves—better measurement of quality means better care for our patients."

The Joint Commission will begin using measurements of clinical outcomes as indicators of quality in the accreditation process in 1987. "America's health care leaders are increasingly talking about quality. But many still suggest that it defies attempts to define it and measure it. We are convinced it can be defined and can be effectively measured. It's time to stop talking and start moving," explained O'Leary.

In support of these goals the Joint Commission has created a new Department of Research and Development. Its challenge is the development of a full set of clinical outcome indicators, and the supporting data acquisition system, during the coming four years.

"This development will prepare health care facilities, for the first time ever, to measure their performance quality and document their clinical success," O'Leary said.

Purdue to Study Link Between Dietary Fiber and Colon Cancer

Purdue University will be the site for a new cancer research study to be funded by the American Institute for Cancer Research.

The research will examine the relationship between dietary fiber and concentrations of bile acid, a factor which has been identified as having a direct link with colon cancer incidence rates.

Initial studies show that dietary fiber can reduce bile acid concentrations and lower the risk for cancer. However, research has shown that some types of dietary fiber may lead to increased concentrations of bile acid. Further research is needed to categorize types of fiber and to determine their effects on bile acids.



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Health Care Exhibits Get Center Stage at Japan's Made in USA Fair '87

The Japan External Trade Organization (JETRO) announces that registration has opened for the Made in U.S.A. Fair '87, to be held in Osaka at the International Exhibition Center, March 2 to 5, 1987. The fair is open to U.S. manufacturers and exporters.

The theme of the 1987 Fair will be health care. Four categories of exhibits will stress medical and dental equipment and hospital equipment; home care products and equipment for senior citizens and the handicapped; physical therapy equipment; and health care products such as health foods.

Supreme Court Denies Aspartame Objections

The U.S. Supreme Court has denied without comment the appeal by the Community Nutrition Institute (CNI) and others challenging the Food and Drug Administration's action in approving the use of aspartame in liquids.

An appeal to the high court was the last avenue open to CNI in its attempts to force the FDA to hold a public hearing on the safety of aspartame, a sweetener. The denial by the Court leaves intact a U.S. Court of Appeals ruling last year that "the FDA properly denied a hearing after finding the petitioners have raised no material issue regarding the safety of the wet use of aspartame."

Walther Institute Names Executive V-P

James E. Ruckle, Ph.D., formerly deputy director of Administration of the UCLA-Jonsson Comprehensive Cancer Center of Los Angeles, has been elected as executive vice president of the Walther Medical Research Institute. The Walther Institute was formed to conduct basic and clinical cancer research and to develop innovative cancer care and awareness programs.

1,300 Older Hoosiers Participate in National Eye Care Project

Thirty-eight elderly Indiana residents might have gone blind from undetected glaucoma if they had not called 1-800-222-EYES, a public service that offers medical eye care to the disadvantaged elderly at no out-of-pocket cost.

The National Eye Care Project, which operates nationwide through a toll-free Helpline, opened in Indiana in April. It has received more than 1,300 calls from seniors in Indiana who may be suffering from glaucoma and other sight-threatening eye diseases.

Nearly 900 of these callers have made appointments with volunteer physicians and have received treatment, including 38 found to have glaucoma. The project is sponsored locally by the Indiana Academy of Ophthalmology and the Foundation of the American Academy of Ophthalmology.

The National Eye Care Project is open to U.S. citizens or legal residents, age 65 or over, who are not currently under the care of an ophthalmologist, who have no access to one, or who have not seen one within the last three years.

Here and There . . .

Dr. Philip M. Coons, an Indianapolis psychiatrist, has been presented the Cornelia B. Wilbur Award by the International Society for the Study of Multiple Personality and Dissociation.

Dr. Robert J. Kunz of Lebanon, completing a three-year internal medicine residency at Methodist Hospital, Indianapolis, has received the Outstanding Teacher Resident of the Year Award and the A. Ebner Blatt Award, the latter for "unselfish devotion to patients and compassionate concern for others. . . ."

Dr. Mark I. Singer of Indianapolis has been presented the Honor Award of the American Academy of Otolaryngology-Head and Neck Surgery for his clinical work as a head and neck surgeon.

Named to fellowship in the American College of Radiology are **Dr. Robert W. Holden** of Plainfield, **Dr. Theodore L. Megremis** of Bloomington, and **Dr. Henry N. Wellman** of Indianapolis.

Dr. Malcolm O. Scamahorn of Pittsboro has been named to the Task Force on Long-Term Health Care Policies of the Health Care Financing Administration.

Marjorie Grace has been named executive director of the LaPorte County Medical Society.

Dr. J. William Wright III of Indianapolis was a featured speaker and panelist at the Second International Symposium and Workshop on Surgery of the Inner Ear, held recently in Colorado.

Dr. Randolph W. Lievertz of Indianapolis lectured the medical staff of Dunn Memorial Hospital in September on "Hormonal Replacement Therapy in Post Menopausal Females;" in August he addressed residents at Westview Osteopathic Hospital on "Empirical Therapy of Hospital Acquired Pneumonias."

Dr. William F. Nowlin of Merrillville discussed mastectomies at a September meeting in Gary of the Yes, We Can support group.

Dr. Michael J. Mirro of Fort Wayne discussed heart disease risk factors at a September public health meeting in Roanoke; **Dr. John E. Marshall** of Roanoke discussed osteoporosis at the same meeting.

Dr. Herbert Arbeiter of Munster discussed "Allergic Problems of the Child in School" during a September meeting in Dyer of the Asthma and Allergy Support Group.

Dr. David S. Batt of Indianapolis discussed arthritis and its treatment during a September program in Tipton.

Physician Recognition Awards

The following ISMA physicians are recent recipients of the AMA's Physician Recognition Award. This award is official documentation of Continuing Medical Education hours earned, and is acceptable proof in most states requiring CME in re-registration that the mandatory hours of CME have been accomplished.

Almase, Rodolfo M., Hobart
Amorini, Michael F., Fort Wayne
Behrend, Frank L., Valparaiso
Bennett, Ronald A., Greenwood
Blusys, Paulius V., Leo
Boerner, Arthur R., Jeffersonville
Bradley, Louis F., Bluffton
Dascoli, Thomas C., Indianapolis
Drew, Daniel C., Jasper
Garber, John E., Indianapolis
Gize, Raymond W., Fort Wayne
Griffith, Richard G., Indianapolis
Guha, Durga D., Clinton
Habermel, John F., New Albany
Halum, Ramon G., Munster
Ho, Chi-Yun, Peru
Jones, Anabel R., Lafayette
Keough, Thomas F., Warsaw
Kho, James B., Terre Haute
Kobak, Alfred J., Valparaiso
Lebioda, Henry S., Merrillville
Maus, Ronald T., Kokomo
Maxwell, Douglas R., Indianapolis
Morrison, Lewis E., Indianapolis
Oni, Richard O., Gary
Pulcini, John D., Evansville
Retson, Nicholas C., Merrillville
Rosevear, William H., Michigan City
Smith, James W., Indianapolis
Stribling, James L., Columbus
Umolu, Anthony A., Michigan City
Yocum, William S., Merrillville

NEWS NOTES

New ISMA Members

George M. Buehler, M.D., Jeffersonville, family practice.

Susan E. Burkholder, M.D., Indianapolis, family practice.

Louis J. Calli Jr., M.D., Bloomington, cardiovascular diseases.

Alan R. Glock, M.D., Richmond, orthopedic surgery.

John T. Hinton, D.O., College Corner, Ohio, family practice.

Kenneth R. Keller, D.O., College Corner, Ohio, general practice.

Magdy W. Khalil, M.D., Jeffersonville, anesthesiology.

David A. Meek, M.D., Markle, family practice.

Daniel H. Raess, M.D., Beech Grove, thoracic surgery.

Gerald A. Ronneau, D.O., Valparaiso, family practice.

Barbara K. Siwy, M.D., Indianapolis, plastic surgery.

Richard M. Spalding, M.D., Sellersburg, internal medicine.

James A. Trippi, M.D., Indianapolis, cardiovascular diseases.

Richard N. Woodruff, M.D., Richmond, obstetrics and gynecology.

Residents:

James H. Adlam, M.D., Indianapolis, cardiovascular diseases.

Luke P. Akard, M.D., Indianapolis, internal medicine.

David B. Beeson, M.D., Indianapolis, family practice.

Anne P. Bueter, M.D., Indianapolis, obstetrics and gynecology.

Joseph M. Casey, M.D., Jeffersonville, general surgery.

John B. Clarkson, M.D., Liberty, family practice.

Charles B. Dinwiddie, M.D., Muncie, internal medicine.

Philip R. Doering, M.D., Bloomington, radiology.

Daniel J. Edwards, M.D., Marion, orthopedic surgery.

Allan E. File, M.D., Sheridan, family practice.

Linda Fundenberger, M.D., Indianapolis, ophthalmology.

Jane Gunsenhouser, M.D., Indianapolis, anesthesiology.

Gwendolyn A. Halsted, M.D., Richmond, family practice.

Gregory K. Heumann, M.D., Indianapolis, internal medicine.

David I. Hollander, M.D., Indianapolis, gastroenterology.

J. Michael Irons, M.D., Indianapolis, pathology.

Angela Johnson, M.D., Muncie, internal medicine.

Michael A. Litwiller, M.D., Indianapolis, psychiatry.

Danita L. Lively, M.D., Indianapolis, child psychiatry.

Aimee R. Mayeda, M.D., Indianapolis, psychiatry.

Dale I. Pollack, M.D., West Lafayette, ophthalmology.

William L. Remington Jr., M.D., Warsaw, general practice.

Bruce J. Roth, M.D., Indianapolis, hematology.

Edward V. Schultz, M.D., Indianapolis, internal medicine.

William B. Solik, M.D., South Bend, family practice.

Emily J. Stapp, M.D., Jeffersonville, psychiatry.

Margie C. Sweeney, M.D., Indianapolis, family practice.

Kamal K. Tiwari, M.D., Bloomington, anesthesiology.

Robert J. Wiedemeyer, M.D., Indianapolis, neurology.

Methodist Hospital Set to Treat Problem of Repeated Miscarriages

The Methodist Hospital, Indianapolis, has established a Center for Reproduction and Transplantation Immunology to provide new approaches to diagnose and treat couples who suffer repeated miscarriages.

Three scientists have joined the staff of the Center. They are the Medical Director, Carolyn B. Coulam, M.D., the Director of Experimental Pathology, W. Page Faulk, M.D., and the Research Director, John A. McIntyre, Ph. D. These three scientists have international reputations and have cooperated together in their research and clinical work for a number of years, but always from different institutions.

Kidney Dialysis Center Opens in Indianapolis

The Indiana Kidney Center is a new dialysis facility for outpatient treatment of patients with chronic kidney failure. It is located at 10th Street and Shadeland Avenue in Indianapolis, and is a joint venture with Community Hospital, Indianapolis.

Dr. Kevin J. Lavelle is the medical director. The Center offers chronic dialysis therapy on-site and in the home through continuous ambulatory peritoneal dialysis (CAPD) and hemodialysis. The telephone number is (317) 353-8900.

Dr. Bonsett Becomes First Professor of Humanities

Dr. Charles A. Bonsett, an Indianapolis neurologist whose Duchenne's muscular dystrophy research has attracted international attention, has been chosen by Indiana University School of Medicine as its first Professor of Humanities.

Announcement of the new post, effective Oct. 1, was made during the annual meeting of the Muscular Dystrophy Foundation of Indiana when Dr. Bonsett was honored as the retiring director of the MD clinic at the I.U. School of Medicine. Dr. Amy Fremion has succeeded Dr. Bonsett as clinic director.

As Professor of Humanities, Dr. Bonsett will be largely responsible for medical history and ethics. He is currently a trustee of the Indiana Historical Society. In the late 1960s he formed the Indiana Medical History Foundation to preserve the Old Pathology Building on the grounds of Central State Hospital; the structure was subsequently developed as the Indiana Medical History Museum.

Let Us Know!

Send your news items and comments to the Editor, INDIANA MEDICINE, 3935 N. Meridian St., Indianapolis 46208.

Resident Physician Essay Contest

During the 1986-87 resident training year the Resident Medical Society of the ISMA and INDIANA MEDICINE will conduct a medical essay contest. All members of the Resident Medical Society are eligible to enter. Each author may choose the subject. Essays (medical articles) will be limited in length to 10 pages of typescript, properly margined and double spaced. Illustrations are encouraged and are to be included in the space limitation. Each article submitted should not have been published previously and should be credited to one author only.

Entries should be mailed to INDIANA MEDICINE, 3935 N. Meridian St., Indianapolis 46208, and be postmarked prior to Jan. 1, 1987.

Judges will consist of two specialists within the field of the article, three medical education directors from Indiana institutions with approved residency training programs, and one member of the INDIANA MEDICINE Editorial Board.

Authors of the articles judged to be the four best will receive prizes of $100 each, and an additional $100 prize will be given to the best article of the four.

All prize-winning articles will be published in INDIANA MEDICINE. It is hoped that space will allow the publication of other entries to be chosen in the order of their numerical scores.

Essays will be judged on the following criteria:

SCIENTIFIC MERIT: Research methods, data analysis, subject or patient population selection, control of variables, literature analysis.

APPLICABILITY: Usefulness of results to private practitioner, academician, researcher.

CONTENT: Depth of analysis, continuity of discussion supporting the main thesis, feasibility of conclusions.

INNOVATION: Uniqueness of idea, creativity, improvement of existing techniques, previously undiscovered data, advancement of basic understanding.

Each essay will be assigned a numerical score for each of the four judging criteria by each judge as follows:

0 Unacceptable	3 Good
1 Poor	4 Above average
2 Fair	5 Excellent

OBITUARIES

Irvin W. Wilkens, M.D.

Dr. Wilkens, 80, a retired Indianapolis internist and diabetes specialist who was associated with INDIANA MEDICINE more than 30 years, died Sept. 17 at Community Hospital, Indianapolis.

He was a member of the Editorial Board from 1955 to 1967, after which he was named a Consulting Editor, a position he retained until his death.

Dr. Wilkens, who retired from practice in 1970, was a 1929 graduate of Indiana University School of Medicine and was an Army-Air Corps veteran of World War II. He was a member of the American Society of Internal Medicine, the Indiana Society of Internists, the American Diabetes Association, the Indianapolis Diabetes Association and the ISMA Fifty Year Club.

He was president of the Marion County Medical Society in 1959 and served five years as treasurer of the ISMA. He founded the Marion County Doctors Telephone Exchange and served as its president seven years.

Ralph J. Harvey, M.D.

Dr. Harvey, 96, a retired Zionsville general practitioner, died Aug. 25 at St. Vincent Hospice, Indianapolis.

He was a 1920 graduate of Indiana University School of Medicine.

Dr. Harvey was a member of the American Academy of Family Physicians and the ISMA Fifty Year Club.



Dr. Wilkens

FILE PHOTO

Louis H. Blessinger, M.D.

Dr. Blessinger, 65, a retired Corydon physician, died Aug. 31 at Harrison County Hospital.

He was a 1945 graduate of Indiana University School of Medicine. He retired from practice in 1983.

Dr. Blessinger was a past president of the Harrison-Crawford County Medical Society and a former ISMA delegate. He was a past president of the Harrison County Hospital and served on the hospital's board of trustees six years. He also was the hospital's first chief of surgery and continued in that role until his retirement from the active medical staff.

Donald T. Rendel, M.D.

Dr. Rendel, 74, a retired Hammond pediatrician, died May 1, 1986.

He was a 1936 graduate of Indiana University School of Medicine and was a Navy veteran of World War II.

Dr. Rendel was board-certified and was a member of the American Academy of Pediatrics. He was posthumously enrolled in the ISMA Fifty Year Club this year.

William S. Dininger, M.D.

Dr. Dininger, 90, a retired Winchester general practitioner, died Aug. 14 at Randolph County Hospital.

He was a 1924 graduate of Jefferson Medical College, Philadelphia, and was a veteran of World War I.

Dr. Dininger, who practiced in Winchester 54 years, was a member of the ISMA Fifty Year Club.

Richard H. Appel, M.D.

Dr. Appel, 84, a retired Indianapolis proctologist, died Oct. 15, 1985.

He was a 1930 graduate of Indiana University School of Medicine and was a Navy veteran of World War II. He retired from practice in 1974.

Dr. Appel was formerly an ISMA delegate representing the Marion County Medical Society. He was a member of the American Proctologic Society and the ISMA Fifty Year Club.

Memorials: Indiana Medical Foundation

The Indiana Medical Foundation, Inc. was formed by the Indiana State Medical Association "for religious, charitable, scientific, literary or educational purposes." It provides financial assistance to support the educational mission of INDIANA MEDICINE.

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Mildred Ramsey

Frederick A. Cravens, M.D.

Dr. Cravens, 50, an Indianapolis physician, died Aug. 11 at St. Vincent Hospital.

He was a 1967 graduate of Howard University College of Medicine after which he served a tour of duty with the Air Force.

Dr. Cravens maintained a private practice 14 years. He was certified by the American Board of Obstetrics and Gynecology and was a member of the American College of Obstetricians and Gynecologists.



THE INDIANA MEDICAL FOUNDATION, INC.

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The Foundation is managed by a board of directors that comprises the members of the ISMA Executive Committee. At present, proceeds from the Foundation investments are awarded to INDIANA MEDICINE to further the continuing medical education program.

Memorial contributions made to the Foundation in lieu of flowers will be acknowledged by the secretary in a letter to the family of the deceased.

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1987 CME CRUISE/CONFERENCES on selected medical topics—Caribbean, Mexico, Hawaii, Alaska, China/Orient, Scandinavia/Russia. 7-14 days year round. Approved for 20-24 CME Cat. 1 credits (AMA/PRA) and AAFP prescribed credits. Distinguished professors. FLY ROUND-TRIP FREE ON CARIBBEAN, MEXICAN & ALASKAN CRUISES. Excellent group fares on finest ships. Registration limited. Pre-scheduled in compliance with present IRS requirements. Information: International Conferences, 189 Lodge Ave., Huntington Station, NY 11746—(516) 549-0869.

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Membership Roster

The 1986-87 edition of the Indiana State Medical Association Membership Roster is now available. The roster is mailed automatically to all ISMA members.

Additional copies of the roster will be sold for $15.00 each for a physician member and $30.00 each for a non-member, payable in advance. Checks should be payable to the Indiana State Medical Association.

For more information or to order copies, write to the ISMA Membership Department, Attn: Rosanna Iler, 3935 N. Meridian St., Indianapolis, Ind. 46208.

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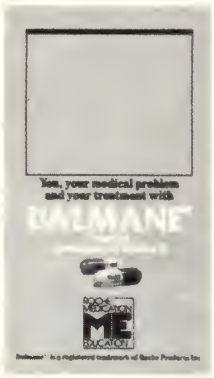
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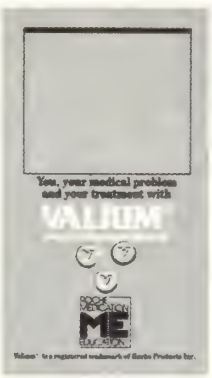
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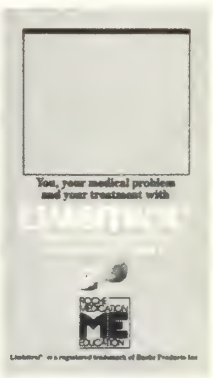
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DECEMBER 1986 VOL. 79 NO. 12

INDIANA MEDICINE

The Journal of the Indiana State Medical Association



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INDIANA MEDICINE

Vol. 79, No. 12
DECEMBER 1986

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MEDICAL MUSEUM NOTES

CHARLES A. BONSETT, M.D., Indianapolis

WHAT CHANCE does the young physician have for a long, happy, successful marriage when the marriage partner is determined to follow an independent professional career?

Many physicians today are discovering the unique stresses posed by such an arrangement. However, the problem is not entirely new. One Hoosier physician who had pioneering experience in this regard was Dr. John Dalton Stewart, a 1905 graduate of the Medical College of Indiana.

Dr. Stewart, whose office was located in downtown Indianapolis, was the house physician to the Claypool Hotel, where many prominent visitors stayed while in the city.

One such visitor in 1912 was Olga Petrova, described by the newspapers as a notable Russian actress. Actually, she wasn't Russian; she was British, and her real name was Murial Harding. The name change and the fictitious story created about her background had given her career a top-billing boost, and now she was touring America, engaged to play at Keith's Indianapolis Theater in December.

She became ill while at the Claypool, so Dr. Stewart (a young bachelor) was summoned. The result was that Olga was soon healed but, in the process, she and the doctor became enamored and within a few weeks their wedding announcement appeared in the local papers.

It was stated that Olga Petrova was renouncing her theatrical career and that henceforward she would be Mrs. John Stewart and would pursue the career of housewife and mother.

Soon after the marriage, a different story appeared (*The Indianapolis Star*, July 13, 1913, page 1). The headline over the article read: "Dare Be Yourself Though a Wife, Mme. Petrova Advises Her Sisters."

A reporter, Belinda Brewster, knocked on the actress' door and when it was opened, said, "Hello, Mrs. Stewart." Then she introduced herself.

"Come in, my dear, but please don't call me Mrs. Stewart," Olga said. "I should no more want to be called Mrs. Stewart than my husband would like to be addressed as Dr. Petrova. Why should he lose his identity, or I mine, just because, out of this vast sea of men and women, we have chosen each other?



Dr. Stewart Olga



Dr. Stewart and his wife, Olga Petrova (standing at left), were on hand at this banquet, given by the couple during the Christmas season, 1913, for poor newspaper boys. During the banquet, held at the Claypool Hotel, Olga presented each boy a bank book showing that an account had been opened in his name and a significant deposit made. Her purpose was to encourage thrift and saving. She offered a prize 12 months hence for the account that produced the greatest growth.

"I cannot see why a woman should give up her name, which she frequently made for herself by study and hard work, anymore than I should ask it of a man.

"If a woman cares to, I have no quarrel with her, but I do not so choose. 'Dare be yourself' is my slogan in life. . . ."

By 1914 the doctor and his wife were living in New York. He rented an office across from Central Park and, in addition to medical practice, took postgraduate study. He also served as agent for his wife, who became a writer and motion picture actress. She soared to heights and soon was able to build a luxurious estate at Great Neck, L.I.

In due time the stresses imposed by the doctor's need to be anchored to his community of practice, and his wife's similar demand to be on the move, proved to be too much. They had everything that money could buy, but they could not achieve and maintain marital harmony and content. They tried, they failed, and they were divorced.

Olga Petrova was eminently successful as an actress, less so as a poet and playwright. She was also a shrewd business manager. Between 1912 and 1922 her name became as well known as that of Mary Pickford and Charlie Chaplin, and during this time she amassed a fortune, which was invested wisely. By 1923 she was able to retire. In 1922 she sold her Long Island estate to Walter Chrysler for a small fortune, then built on the Riviera, where she moved in 1927. She died in 1977 at the age of 93 years.

It is doubtful that Dr. Stewart had any significant influence on his wife's career. Her star was in the beginning of its ascent at the time of her marriage.

It is equally doubtful that Olga Petrova had any significant influence on her husband's career. What does stand out is that the incessant demands of their individual professions broke the marriage. Had it survived to 1927, the year of Olga's move to the Riviera and the beginning of her 50 years of retirement, they could have lived happily ever after.



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Ross Laboratories, a division of Abbott Laboratories, announces PEDIALYTE Oral Electrolyte Solutions in the 32-oz size for treatment of children suffering from diarrhea and dehydration. Pedialyte is available unflavored and fruit flavored. It is especially useful because it has the correct electrolyte content. Home beverages usually contain either too much or too little electrolyte content.

Commercial Writing Service conducts a service for the information materials now available for patients with Lactose Intolerance. One of these is a book, *The Milk-Free Diet Cookbook*, by Jane Zukin, published by Sterling in 1982. Other information items include "The Newsletter" with four issues annually. There is also a comprehensive fact book and a recipe brochure.

Procter & Gamble is introducing the first orange juice and grapefruit juice beverages fortified with calcium, "Citrus Hill® Plus Calcium." Both beverages contain a unique form of calcium that provides superior bioavailability. Original introduction was in Evansville, Indiana and Charleston, West Virginia.

Bristol-Myers announces availability of VePesid® (etoposide) for use in combination chemotherapy as first-line treatment of a small cell lung carcinoma.



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Bristol-Myers announces the approval of BuSpar® (buspirone hydrochloride), a unique new agent for the treatment of anxiety disorders. Mead Johnson will market the product. It is not related to any other of the antianxiety agents. It exhibits no central nervous system depressant activity, is less sedating, and does not produce significant functional impairment.

The Dosimeter Corporation has a unique radiation survey meter. The FH40F Survey Meter has a built-in detector and eight external probes that can extend the range by 9 decades or can measure radiation levels under 60 feet of water or in a water sample. Recommended for routine use in laboratories or in reactors.

Smith Kline & French Laboratories is changing the shape of its 60-capsule bottle of 'Ridaura' (auranafin), its disease-modifying drug for rheumatoid arthritis. To make it easier for patients to open, the familiar cylindrical bottle is being replaced by a new rectangular one.

A new preventive for the safety of patients in bed is the "Fall-Safe™ Monitor." The device was devised by Dr. David Green and his father Dr. Frank Green. It consists of a loosely fitting vest and has proven effective and safe. When the patient exceeds the limits prescribed by the monitor, an audible alarm or a call to the nurses' desk is triggered. The patient is able to make the usual normal movements, including turning over, but is protected by the alarm if attempting to leave the bed.

Hewlett-Packard has a new "Users Guide to Supplies and Accessories for Medical Instrumentation." It is Publication 5954-1760 and is available at no charge.

Radio Shack® has issued a catalog specifically catering to the needs of the impaired. The 32-page, magazine-sized publication, "Selected Products for People With Special Needs," is available by mail. The items featured are available at most of the Radio Shack outlets nationwide. Many of the products are designed to aid persons with hearing or sight problems.

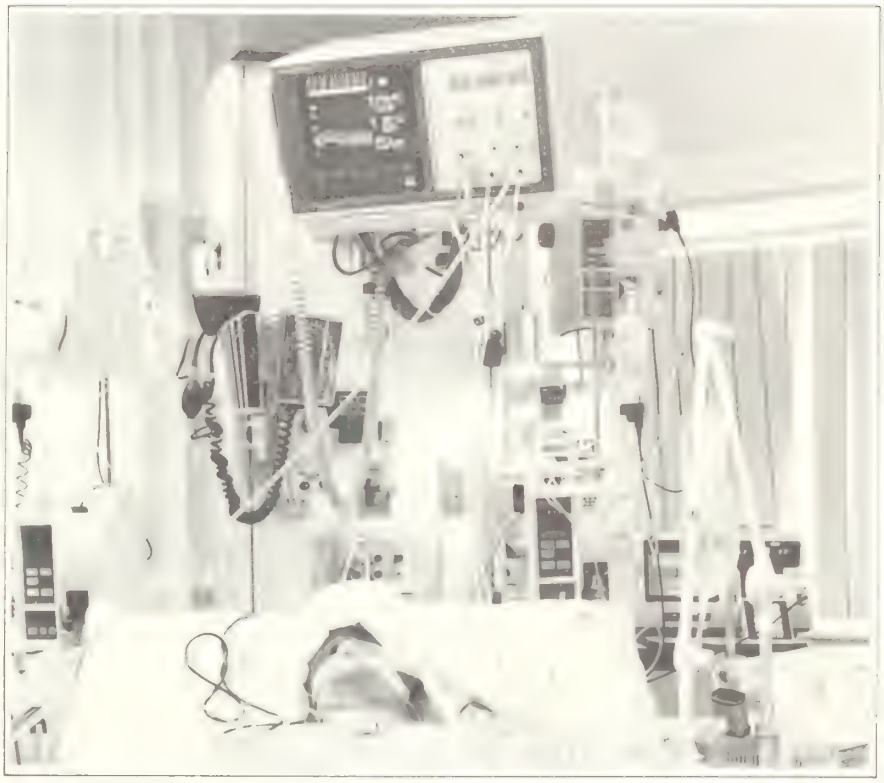
Abbott Laboratories has added a test for opiates to its *TDx* abused drug testing system. This is the fourth substance in the system, which originated with tests for cocaine, phencyclidine (PCP) and barbiturates.



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FUTURE FILE

Hand Surgery

"Internal Fixation in Hand Surgery" is the title of a course announced by the American Society for Surgery of the Hand. It is scheduled for March 2 to 6, at Vail, Colorado.

The tuition is $850 or $900 for physicians and $550 or $600 for residents and fellows, depending on whether the tuition is paid prior to February 2 or after that date. Dr. Hill Hastings of Indianapolis is one of the faculty members.

For full information, write to the Society at 3025 S. Parker Road, Suite 65, Aurora, Colorado 80014.

Ob/Gyn Update

The Scott-White Clinic of Temple, Texas announces "Update '87: Office Obstetrics and Gynecology," a course to be conducted March 1-7 at the Shadow Ridge Resort and Conference Center in Park City, Utah.

The correspondent is Charlene E. Lee, in care of the Clinic at Temple, Texas 76508—(817) 774-2821.

Family Practice

The 11th Annual "Midwinter Family Practice" conference will be conducted by the University of Michigan Medical School Feb. 1-6 at the Hilton Shanty Creek, Bellaire, Mich. Category 1 and AAFP credits: 21.5 hours.

The correspondent is Gayle Fox, Office of CME, Towsley Center, Box 0201, Ann Arbor, Mich. 48109—(313) 763-1400.

Leukemia Symposium

The Leukemia Society of America will hold its Third National Medical Symposium at the Town and Country Hotel in San Diego, Calif., March 18 to 21.

The program is directed toward physicians, scientists, fellows in training, residents, oncology nurse specialists and allied specialists.

For details, contact the Leukemia Society at 733 Third Ave., New York, N.Y. 10017—(212) 573-8484.

The *Journal of the American Medical Association* publishes a list of CME courses for the United States twice yearly. The January listing features courses offered from March through August; the July listing features courses offered from September through February.

Indiana University CME

Feb. 19: Update in Infectious Diseases, Reid Memorial Hospital, Richmond.

Feb. 21-22: Annual Meeting, Indiana Society of Anesthesiologists and Anesthesia Update, Radisson Hotel, Indianapolis.

For further information, contact Melody Dian, Assistant Director, CME, I.U. School of Medicine—(317) 274-8353.

Management Seminar

"The Physician in Management Seminar I" is the title of a CME program to be conducted by the American Academy of Medical Directors, at The Sheraton Sand Key, Clearwater Beach, Florida, Feb. 16 to 20. It rates 31 CME credits.

The correspondent is Sherry Mason, AAMD, 4830 W. Kennedy Blvd., Suite 648, Tampa, Fla. 33609—(813) 873-2000.

Methodist Hospital CME

Feb. 13-16: Third Annual M.H. Perinatology Symposium, Sugar Loaf Resort, Cedar, Mich.

Feb. 28-March 1: Third Annual Symposium on Extracorporeal Shock Wave Lithotripsy, Hilton-on-the-Circle, Indianapolis.

April 13-15: Seventh Annual House Staff Alumni Meeting. "From Lasers to Lithotripsy: Recent Technological Breakthroughs in Surgery," Hotel Royal Plaza, Lake Buena Vista, Orlando, Fla.

For more information, contact Dixie Estridge, CME coordinator, Graduate Medical Center, Methodist Hospital of Indiana—(317) 929-3733.

Sleep Disorders

The Sleep Disorders Center at Winona Memorial hospital, Indianapolis, will sponsor its Second Annual Sleep Disorders Conference Jan. 16 at the hospital.

Peter Hauri, Ph.D., Dartmouth, will be the featured speaker. An expert in psycho-physiology, he will also be speaking at the Indiana Psychiatric Society meeting Jan. 15.

For details, please call Karon Crowe, Medical Education, Winona Hospital—(317) 927-2042.

Family Practice Review

"Family Practice Review—a Comprehensive Update" will be the subject of a CME meeting at Omaha, Neb., April 27 to May 8. Another CME meeting on the same subject will be conducted from March 30 to April 10.

The registration fee for each meeting is $850. Contact Marge Adey, University of Nebraska Medical Center for CME, 42nd and Dewey Avenues, Omaha 68105—(402) 559-4152.

Emergency Medicine

The Eighth Annual Mammoth Mountain Emergency Medicine Ski Conference will be conducted by Medical Conferences, Inc., March 8 to 13 at Mammoth Lakes, Calif.

The fee for physicians is $350, for physicians in training $250. Credits: 20 hours, AMA Category 1, and 20 elective hours, AAFP.

Contact Medical Conferences, P.O. Box 52-B, Newport Beach, Calif. 92662—(714) 650-4156.

The Aging Nervous System

"The Aging Nervous System: Dementia and Behavioral Changes in the Elderly" is the title of an educational conference to be conducted March 14 in Fargo, N.D.

The correspondent is Dr. Harry A. Whitaker, The Neuropsychiatric Institute, 700 First Ave. S., Fargo, N.D.—(701) 235-5354.

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CANCER CORNER

WILLIAM M. DUGAN, JR., M.D.
Methodist Hospital Cancer Care Center, Indianapolis

Breast Cancer Screening Program Enters Third Year—The cooperative program between the Little Red Door and Planned Parenthood of Central Indiana to provide local women with low cost breast screening exams is entering its third year.

The Little Red Door board, which approved a grant of $15,000 each of the first two years of the program, has increased its financial support and at the Sept. 17 meeting of the board presented a grant of $17,500 to Planned Parenthood.

Women who call the Little Red Door office with breast problems are referred to either their private physician or to a Planned Parenthood clinic. Upon exam, the person may be referred to another source for further diagnostic testing.

In addition to a palpable examination, women also receive instruction on how to do breast self-examination. Clinics where the breast cancer screening service is provided by Planned Parenthood are: Midtown clinic, 3219 N. Meridian St.; Castleton clinic, 8121 Center Rund Dr.; Eastside clinic, 8502 E. Washington St.; Southside clinic, 3774 S. East St.; Avon clinic, 12689 W. Rockville Rd. (Hendricks County).

A fee of $4.50, based on ability to pay, is charged at the Midtown, Avon and Eastside clinics. Women examined at the Castleton and Southside clinics are charged a non-negotiable fee of $4.50.

One in 11 American women will develop breast cancer sometime during her life and the earlier it is detected, the better the chances for survival and successful treatment.

Women should be alert to these warning signs: a lump or thickening in the breast or under arm; a change in breast shape; discharge from the nipple or skin; scaliness or sores on or around the nipple; a redness of the skin; a change in the direction of the nipples; skin pore enlargement.

For more information about the breast cancer screening program call the Little Red Door, Marion County Cancer Society (925-5595).

R. Livingston Ireland Cancer Center University Hospital of Cleveland continues its Major Advances in Oncology series with the Focus on Melanoma on January 31, 1987.

A. Bernard Ackerman, M.D., New York University, will present "Confusion about Dysplasia, Dysplastic Cells, Dysplastic Nevi and the Dysplastic Nevus Syndrome," and Arron B. Lerner, M.D., Yale University School of Medicine, will present "The Biology of Melanoma."

For additional information, contact Barbara Guy, Assistant to the Director, Ireland Cancer Center, Lowman Building-211, University Hospitals of Cleveland, 2074 Abington Road, Cleveland, Ohio 44106, or call 216/844-7856.

Oncology Nursing Education Grant—The following guidelines will be used in awarding American Cancer Society, Indiana Division funds to support selected nurses' attendance at the annual Oncology Nursing Society Congress. Criteria for Nurse Applicants: 1. Be a registered nurse with a current Indiana License; 2. Be a nurse interested in oncology nursing care and having at least two years previous oncology experience. Employment on an oncology unit is not required but exposure to individuals with cancer is essential; 3. Be a member of the Oncology Nursing Society; 4. Be an active ACS volunteer at the local level with documented evidence of community and professional involvement; 5. Apply for the ONS education grant only one time every three years. This assures that grant monies will not be used repeatedly by a limited group of nurses; 6. Not be receiving funds from another agency for the same purpose.

Upon conclusion of the Congress the Nurse will agree to: 1. Complete a brief written report using the designated form. Submit to the American Cancer Society within one month following the Congress; 2. Within three months, conduct a program to disseminate information gained at the congress. Program options may be staff development within your institution, a community education program, or a presentation at a professional meeting such as the local ONS interest group, etc.; 3. Submit a brief written report to *Oncology Nursing Update.*

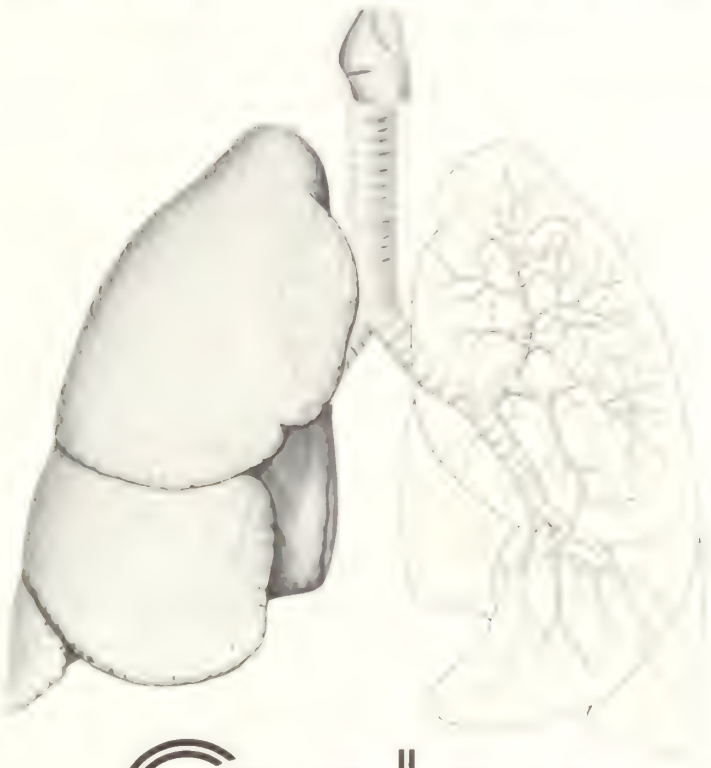
Applications should be obtained and returned to: Medical Affairs Director, American Cancer Society Indiana Division, 8575 N. Valparaiso Court, Indianapolis, Indiana 46268. All applications must be received by the ACS office by February 1, 1987 to be considered for the spring congress of the same year. The $500 grant will be awarded on or about March 1, 1987. Grant funds can only be used to pay expenses incurred from attendance at the next spring ONS Congress. Applicants not awarded funding will also be notified about March 1, 1987.

Final Indiana Cancer Registry Rules-Title 410—The final rules for the Cancer Registry were approved for distribution by the Executive Board of the Indiana State Board of Health at its September meeting.

The State Cancer Registry Advisory Committee met and approved a draft of the Policy and Procedure Manual. The draft of the data abstract is now being developed. As soon as the PPM and Abstract are final, they will be sent to hospitals.

The Indiana Hospital Association is aware of the concerns that both large and small hospitals have continued to express regarding the development, implementation and projected cost of the state cancer registry. The Association is working to evaluate the impact of compliance with the cancer registry statute on the hospital industry.

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- In renal impairment, safe dosage of Ceclor may be lower than that usually recommended. Ceclor should be administered with caution in such patients.
- Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.
- Safety and effectiveness have not been determined in pregnancy, lactation, and infants less than one month old. Ceclor penetrates mother's milk. Exercise caution in prescribing for these patients.

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- Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.
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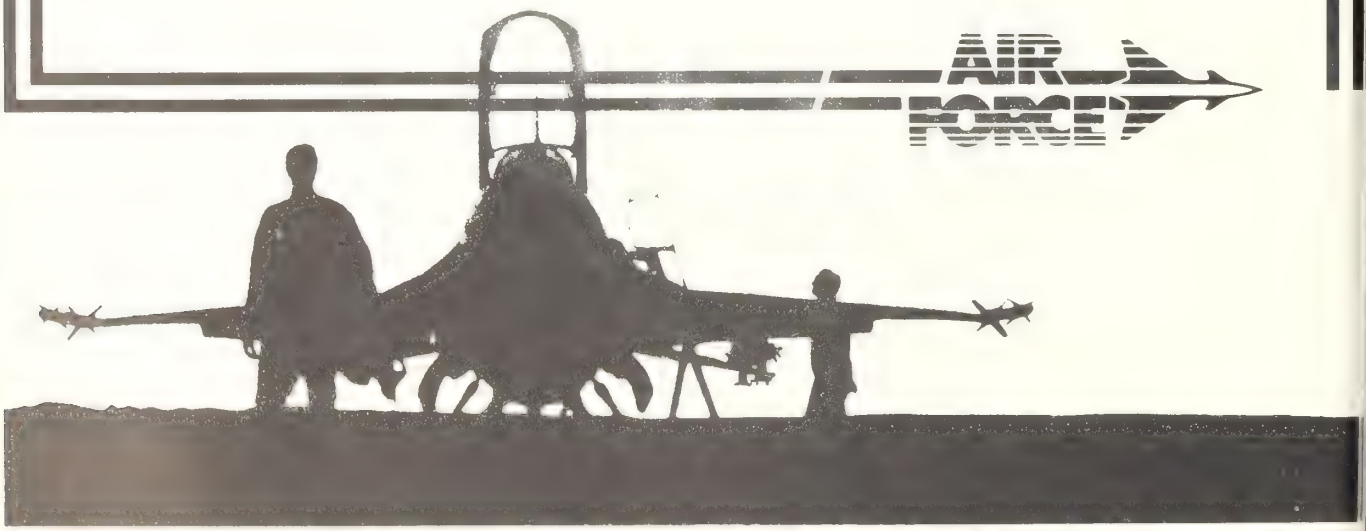
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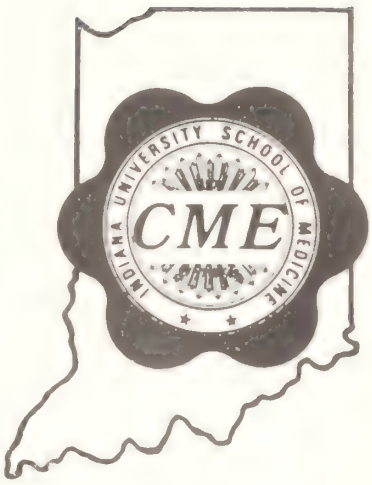
AIR FORCE



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As an organization accredited for continuing medical education, the Indiana University School of Medicine certifies that this CME activity meets the criteria for one credit hour in Category 1 for the Physician's Recognition Award of the American Medical Association, provided it is used and completed as designated.

To obtain Category 1 credit for this month's article, complete the quiz on page 1071.



Carcinoma of the Prostate

Is Radiation Therapy an Alternative to Radical Prostatectomy?

JAMES G. MORPHIS II, M.D.
NED B. HORNBACK, M.D.
Indianapolis

THE INCIDENCE OF carcinoma of the prostate remains second only to lung cancer in males. In addition, carcinoma of the prostate is the second highest primary site of cancer mortality in males aged 75 or older; and again, is exceeded only by lung cancer mortality in that age group.[1] The highest incidence of prostate cancer is noted in U.S. blacks; the lowest is in Japanese males residing in Japan. As etiologic factors in the development of prostatic carcinoma, sexual activity, venereal disease, viral agents, hormonal profile, familial relationships and benign hypertrophy have been proposed but not established.[2]

Staging Work-up

Clinical staging classifications vary; however, one of the most useful staging classifications is listed in the *Table*. Approximately 70-80% of patients will be found to have stage C or D carcinoma at initial presentation. Common presenting symptoms are urinary frequency and nocturia. Patients may also present with urinary hesitancy with some degree of urinary retention, dribbling, dysuria, hematuria, back pain, weight loss or anemia. A prostate nodule found on rectal examination should be considered to be cancer until proven otherwise.

Options in biopsy include transurethral resection; however, most early lesions are found to be peripheral near the prostatic capsule and may not be adequately evaluated by this method. An open retropubic biopsy is highly accurate but risks the complications of impotence, incontinence and rectal injury. Needle biopsies using large bore-cutting needles from a transrectal or

From the Dept. of Radiation Oncology, Indiana University School of Medicine, 535 Barnhill Drive, Indianapolis, Ind. 46223.

TABLE

Stage:

A1 – occult, well-differentiated ≤ 3 slides positive or < 1 cm^3 of tissue

A2 – occult, moderate to poorly-differentiated, > 3 slides positive, or > 1 cm^3 of tissue

B1 – single nodule ≤ 2 cm diameter

B2 – nodule > 2 cm or diffuse or bilateral

C1 – extracapsular extension < 6 cm (< 70 gm) or elevated acid phosphatase

C2 – extracapsular extension > 6 cm (> 70 gm) or elevated phosphatase

D1 – lymph node metastasis

D2 – distant metastasis

transperineal approach are also quite accurate with little danger of the complications associated with open biopsy; however, fever, sepsis, hematuria or rectal bleeding may occur. Perhaps the least morbidity has been associated with fine needle aspiration but, to be highly accurate, this technique requires close cooperation with an experienced cytopathologist.[3]

The resulting work-up should reflect the spread patterns of prostatic carcinoma. Metastases to lymph nodes occur most commonly followed by metastases to the skeleton, lungs, bladder and liver.[4] In addition to the history, physical examination and prostate biopsy, the work-up should include a CBC, serum chemistry screen, prostatic/total acid phosphatase, chest x-ray and Technetium-99 medronate bone scan. Patients thus found to be free of distant metastases may undergo retroperitoneal lymph node dissection, in that over 50% of patients will be upstaged following bone scan and node dissection.[5,6] While retroperitoneal lymph node dissection is clearly the most accurate method of detecting pelvic nodal metastases, the system of grading tumor differentiation according to Gleason has been shown to be of value in predicting the likelihood of positive pelvic nodes.[7,8] Patients with Gleason sums of 8-10 will have approximately 90% risk of node metastases at pelvic lymphadenectomy, whereas patients with sums of 2-4 will have less than 10% risk.

Surgical Vs. Radiotherapeutic Treatment

Surgical Therapy

For many physicians, the preferred therapy for stages A2 and B adenocarcinoma of the prostate is staging retroperitoneal lymph node dissection and radical prostatectomy. For stage A1 disease, radical prostatectomy is unnecessary and only 13% of radical prostatectomy specimens will reveal residual tumor after transurethral resection in stage A1 carcinoma, whereas 65% of stage A2 patients will have residual tumor at radical prostatectomy.[9] For stage A1 disease, repeat transurethral biopsy has been used in management; however, only about 5% will demonstrate upstaging.[10] Therefore, management of stage A1 disease will rely upon serial digital prostatic examinations and prostatic acid phosphatase.

The use of retroperitoneal node dissection and radical prostatectomy in stages A2 and B disease has recently been supported by a randomized prospective study by the Uro-Oncology Research Group[11] in which the patients were randomized to radical prostatectomy or radiation therapy following a negative retroperitoneal lymph node dissection. At five years, distant metastases were identified in 10% of the radical prostatectomy group and 38% in the radiation therapy group. Overall survival and local tumor control were not evaluated in this study. In addition, over 50% of the patients were lost to follow-up. In the Mayo Clinic experience,[12] 15% of patients with stage B1 disease and 25% of patients with B2 disease died of their disease by 10 years, whereas 70% of patients with stage C disease died as a result of their cancer by 10 years. The 51%, 15-year, disease-free survival reported by Walsh and Jewett[13] following radical prostatectomy for stage B1 disease did not differ significantly from the expected survival in the general population.

The most frequent complication and therapeutic deterrent to radical prostatectomy for many men has been the nearly universal incidence of impotence. However, Walsh, *et al.*[14] have demonstrated a modification of the radical retropubic prostatectomy that has preserved sexual function. All of the 12 men reported by Walsh have continued to experience erections up to 10 months after the surgery, which preserves the neurovascular bundles.

The second major complication of radical prostatectomy is urinary incontinence, which occurs in approximately 10% of patients.[15] Elder,[16] however, reported a 50% risk of incontinence in patients undergoing radical perineal prostatectomy between four weeks and four months after transurethral resection of the prostate. Other surgical complications include wound infection, rectal injury, perineal fistula, wound dehiscence, urethral stricture, pelvic abscess, lymphocele, epididymitis and perioperative death.

Radiation Therapy

External beam irradiation has played a role in the treatment of carcinoma of the prostate. That role may vary from being the preferred modality in the treatment of stages A2 through D1 disease to that of a restricted palliative role only. The literature reports of the results of irradiation as a primary treatment modality have yielded five-year survivals in the range of 94-100% for stage A2 disease, 76-91% for stage B disease and 60-78% for stage C disease.[17,18,19,20] It must be remembered that the sur-

vival figures in the preponderance of the radiotherapy literature are given for clinical staging categories rather than surgical staging; therefore, patients with positive pelvic lymph nodes may be included in the radiotherapy results and excluded in the surgical results.

Stanford University has one of the largest series of radiotherapy for prostatic carcinoma and has recently reported the treatment results of patients who have undergone retroperitoneal lymph node staging prior to pelvic irradiation.[21] The results of the study are illustrated in *Figure 1* and demonstrate an approximately 70% 12-year survival in patients undergoing pelvic irradiation who have a negative lymph node dissection. About 10% of this patient population consisted of stages A2 and B1 cases; 60% B2 and 30% C. These results compare favorably with the surgical series.

Bagshaw[22] compared the results of the VA Uro-Oncology group with the results of a randomized prospective study conducted at Stanford in which patients with a negative retroperitoneal lymph node dissection were randomized to receive irradiation to the prostate or prostate plus pelvic lymph nodes. The staging requirements were noted to be nearly identical; the only difference being the lack of requirement for a normal acid phosphatase value in the Stanford series. There were 51 patients with A2 and B disease to compare with the time-to-first-evident-metastasis end point of the VA Uro-Oncology Group. *Figure 2* demonstrates the similarity of failure rates between the VA surgical series and Stanford radiation series. Direct comparison, however, is difficult because patients were not randomized in the same study.

Irradiation has been found to be a useful adjunct to radical surgery, as well, in that approximately 40% of patients clinically staged to have A2 or B disease may be found at radical surgery to have capsular or seminal vesicle invasion.[23] Local control with

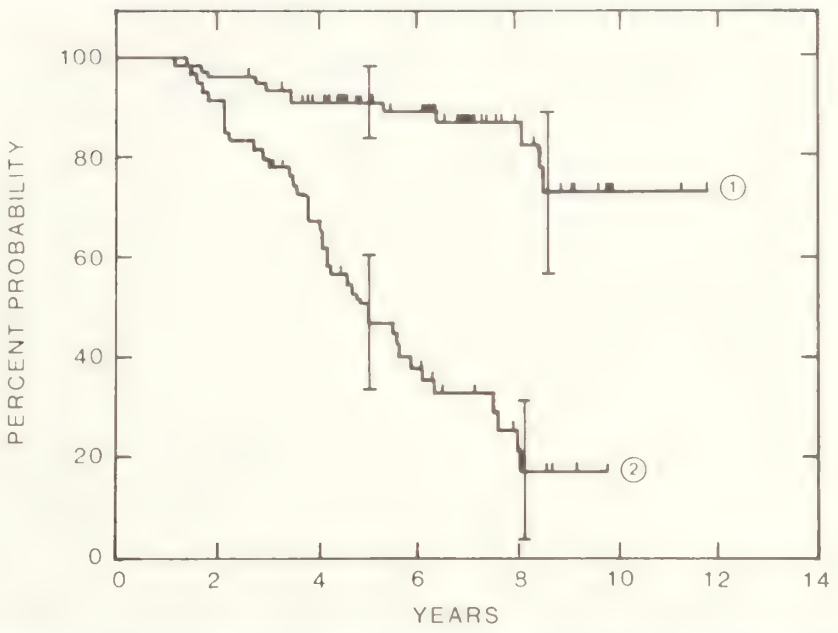


FIGURE 1: Duration of survival vs. status of pelvic and para-aortic lymph nodes as proved by 1) no adenopathy (n = 82) and 2) adenopathy (n = 60). P_{Ge} = 0.00001.

(Bagshaw MA: *Urologic Clinics of North America*, 11(2):297-302, 1984. Reprinted with permission from WB Saunders Co, Philadelphia).

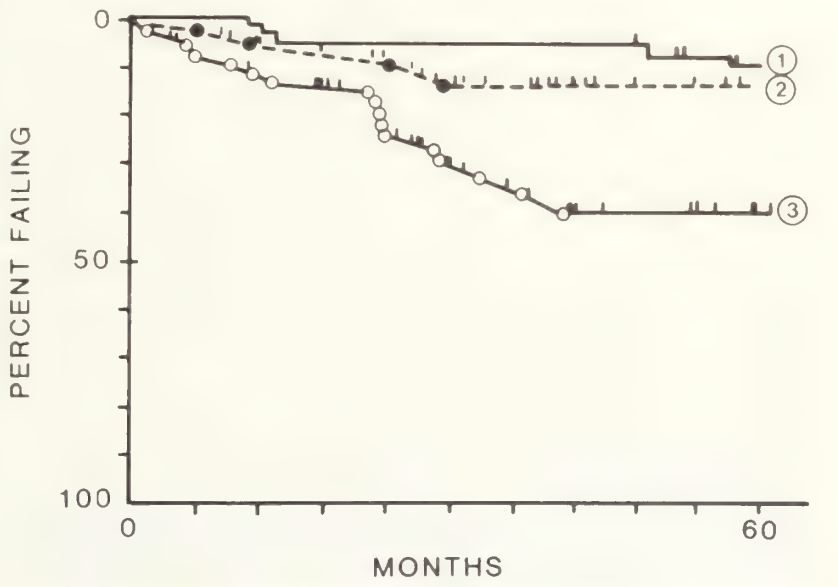


FIGURE 2: Time to first evidence of treatment failure. Curve 1 represents the first five years of all surgically staged A2 and B patients in the Stanford Series. 1) Radiation Therapy:Standford Series (n = 51); 2) Radical Surgery:VA Series (n = 41); 3) Radiation Therapy:VA Series (n = 56).

(Paulson DF, et al, *J Urol*, 128, 1982; and Bagshaw MA, *Cancer*, 55:2079-85, 1985. Reprinted with permission).

postoperative radiation has been reported to be as high as 96%[24]; however, as would be expected, there seems to be no impact on the rate of distant metastases.

An alternative therapy using interstitial radioactive iodine (I-125) implantation was popularized in the early 1970s as a local form of prostatic irradiation for stages B and C carcinoma, with hoped-for higher control rates and lower complication rates. Long-term follow-up of the first 100 cases treated at Memorial Sloan-Kettering[25] demonstrated an overall nine-year survival of 87% for patients with negative lymphadenectomy and 14% with positive nodes. However, serial digital rectal examinations have revealed progressive prostatic tumor in 32%.

Complications of irradiation can be either acute or delayed according to onset of occurrence. Acute effects occur during treatment while chronic complications are those occurring at least eight weeks following completion of irradiation. The most common acute side effect of irradiation is diarrhea, demonstrated in approximately 80% of patients by about the fifth week of irradiation, decreasing thereafter to approximately 10% within one month of treatment completion.

Cystitis, including dysuria and increased urinary frequency with or without hematuria, may occur in approximately 25% of patients by completion of the course of irradiation, decreasing to about 6% within two months.[26] Even though preservation of sexual potency has been a motivating factor in the selection of radiotherapy, impotence has been noted in 30-40% of patients.

Other delayed complications of irradiation have been studied in a relatively large population of patients placed on Radiation Therapy Oncology Group (RTOG) radiation therapy protocols #75-06 and #77-06.[28] Persistent diarrhea or cystitis was noted in approximately 10%. Other complications included proctitis (8%), genital or leg edema (5%), melena (4%), hematuria (3%), urethral stricture (2%), suprapubic fibrosis/edema (2%), rectal/anal stricture (1%), bladder neck contracture, rectal ulcer or bowel obstruction (.5%).

The development of post irradiation lymphedema has been observed to be highly dependent upon the extent of prior surgery.[29] Patients placed on RTOG protocols #75-06 and #77-06 were evaluated according to the extent of lymph node dissection. These were classified as 1) biopsy (sampling only); 2) limited dissection - divided into subgroups: a) less than 10 nodes dissected per side and; b) 10 or more nodes dissected per side; 3) radical dissection involving skeletonization of iliac vessels or greater than 50 nodes in the specimen. Of 133 patients evaluated, 27 developed lymphedema. In only three cases could lymphedema be attributed to recurrent tumor. None of the patients randomized to receive irradiation limited to the prostate developed edema.

Of those patients undergoing pelvic irradiation following lymphadenectomy, 0% (0/8) developed lymphedema following lymph node biopsy; 27% (17/62) developed lymphedema following limited node dissection, whereas 67% (4/7) developed edema following radical dissection.

It is current practice at Indiana University to limit pelvic irradiation to the prostate and paraprostatic tissues following radical node dissection, or in patients with stage A2 or B1 carcinoma who have not undergone retroperitoneal lymph node dissection, but who have an extremely low risk of lymph node metastasis as evidenced by a Gleason score of 4 or less.

Conclusion

Carcinoma of the prostate remains a malignancy in males with both high incidence and mortality. Resectable carcinoma (below stage C) will tend to demonstrate a five- and ten-year survival similar to the age-adjusted expected survival of the general population whether treated by radical surgery or irradiation. Selection of patients for either modality, therefore, should take into consideration factors such as surgical risks, relative risks of treatment complications, impotence, incontinence, bowel/bladder damage, scrotal/leg edema. Patient preferences for or against surgical convalescence versus daily outpatient treatments over several weeks must also be taken into consideration. Finally, the economic impact of therapy will increase in importance as attempts are made to reduce the overall costs of medical care.

A California study[30] compared the relative cost of radical prostatectomy, lymph node dissection and Iodine-125 implant and external beam irradiation, and found the average cost for radical prostatectomy or lymph node dissection and Iodine-125 implant was more than double the cost of external beam irradiation. It must be remembered, however, that this was a single institution study and may not be representative of the country as a whole.

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Look-Alike and Sound-Alike Drug Names

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Look-alike and sound-alike drug names can be misinterpreted by a nurse reading doctors' orders or by a pharmacist compounding physicians' prescriptions. Such misunderstandings can result in the administration of a drug not intended by the prescriber. Awareness of such look-alike and sound-alike drug names can reduce potential errors.

	VELBAN	VALPIN
Category:	Mitotic inhibitor	Anticholinergic
Brand Name:	Velban, Lilly	Valpin, DuPont
Generic Name:	Vinblasin sulfate	Anisotropine methylbromide
Dosage Forms:	Injection	Tablets
	MAXZIDE	**MAXIDEX**
Category:	Diuretic	Ophthalmic (corticosteroid)
Brand Name:	Maxzide, Lederle	Maxidex, Alcon
Generic Name:	(Triamterene-Hydrochlorothiazide)	Dexamethasone
Dosage Forms:	Tablets	Suspension (ophthalmic) Ointment (ophthalmic)

Superior Vena Cava Syndrome, Re-visited

Editorial

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IN THIS ISSUE of INDIANA MEDICINE, the report by Reddy and coworkers[1] of superior vena cava (SVC) syndrome caused by benign intrathoracic goiter calls attention to the fact that the prognosis in this syndrome is not always bad. On the contrary, as in their case, sometimes it is good and a cure can be achieved. As pointed out in their article, most cases of SVC syndrome nowadays are due to malignant disease; approximately 85% of these are terminal at the time the diagnosis is made. This dismal realization should not obscure the fact that non-malignant causes of the syndrome do occur. This underscores the importance of seeking an etiological diagnosis in every case.

32 years ago, from the same institution,[2] a similar report of SVC syndrome due to substernal goiter and cured by surgery was published by the writers of this editorial, in collaboration with Dr. Bruce A. McArt and the late Dr. William A. Tosick.[3] A look back over these three decades may bring into sharper focus some of the advances in diagnosis and changes in therapy.

Although the superior vena cava is only 3½ inches in length, its close anatomic relationship with many vital organs, including the ascending aorta, the right lung and pleura, the pericardium, the trachea, esophagus, right pulmonary artery, the innominate artery, and bronchial, right anterior mediastinal, and right lateral tracheal nodes, makes it vulnerable to obstruction. Its thin walls and relatively low intraluminal pressure add to this vulnerability. Enlargement or inflammation of any of the adjacent structures can produce caval obstruction by compression, invasion, or erosion. Stenosis alone may occur or occlusion by thrombosis.

Examples of non-malignant causes of SVC syndrome, although statistically much less common nowadays, encompass a great variety of different lesions (*Table*). SVC obstruction in almost all of these conditions may be amenable to treatment, curative or palliative, depending on the nature of the cause. If the obstruction has developed gradually, collateral circulation may have compensated adequately and no decompression may be necessary. If the syndrome develops acutely, surgical decompression is more likely to be required.

Swelling of the face, eyelids, neck, and hands is a typical early symptom. Proptosis may occur. Increase in shirt collar size may be observed. Cyanosis of the head, neck, upper extremities and trunk and suffusion of the conjunctivae are common, increasing with recumbency or bending over. The intense cyanosis noted above the clavicles has been described as "Stokes' collar." Venous stars may be seen. There is increased prominence of superficial veins in the upper half of the body, the region normally drained by the SVC. The direction of blood flow in the veins is downward, the opposite of the situation in inferior vena caval obstruction.

The only major tributary of the SVC is the azygos vein, which joins it just before the superior cava enters the pericardium, 2 cm. above its junction with the right atrium. If an obstruction is above the point of entry of the azygos vein, the collateral circulation will drain into the azygos and thence

TABLE
Non-malignant Causes of SVC Syndrome

1. Intrathoracic goiter
2. Aneurysms of the thoracic aorta (atherosclerotic, dissecting, and infectious types)
3. Aortocaval fistula
4. Mediastinitis (granulomatous, such as in histoplasmosis, actinomycosis, tuberculosis; pyogenic; post-irradiation; idiopathic)
5. Cystic hygroma
6. Teratoma
7. Dermoid cysts
8. Thymoma
9. A-V fistulas
10. Atrial myxoma
11. Pericarditis
12. Mediastinal emphysema
13. Traumatic mediastinal hematoma
14. Sarcoidosis
15. SVC thrombosis (with polycythemia; complication of Swan-Ganz catheterization, transvenous cardiac pacemaker, and other invasive venous procedures; idiopathic)

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into the distal SVC and right atrium. If the obstruction is below azygos entry, collateral circulation will be more extensive and will ultimately return to the right atrium by a circuitous route through the inferior vena cava. Venous pressure measurements will show elevated values in the upper extremities and normal values in the lower. Further prompt and marked rise in the venous pressure in the upper extremities after tight application of a tourniquet to the lower portion of the chest or by hepatojugular reflux maneuver generally indicates obstruction below the entry of the azygos.

Dyspnea has been attributed to increased intracranial pressure due to the venous hypertension of the head and neck, but, as in the case reported here, can be caused also by tracheal compression by goiter. Other symptoms ascribed to increased intracranial pressure are headache, vertigo, tinnitus, somnolence, stupor, and convulsive seizures. Hemoptysis due to tortuous and greatly dilated bronchial veins has been described.

In 1954, contrast venography was little used. Its early use was followed by disenchantment with the imprecision and unpredictability of the results. The procedure was almost abandoned. In the succeeding years, however, improved radiological techniques led to its reintroduction and subsequent widespread usage. Currently, contrast venography provides safe, precise, imaging of venous structures. It has become the "gold standard" of the various diagnostic tests for venous disease. It is a major diagnostic measure in SVC syndrome.

The advent of computed tomography and, more recently, magnetic resonance imaging, undreamed of 30 years ago, has revolutionized diagnosis of mediastinal lesions and made possible noninvasive studies of great accuracy. Both techniques are of great value in the diagnosis of SVC syndrome. Unlike venography, arteriography was accepted even in 1954 as an accurate investigational tool, but it was not widely used. A steady improvement in radiological methodology since then has made it possible now to obtain with minimal risk and discomfort superb visualization of most arteries. It is a major diagnostic component in the evaluation of the SVC syndrome, especially relating to associated aortic lesions.

Echocardiography is another new modality of recent decades; it has added another noninvasive tool, very useful in the diagnosis of pericardial lesions and of dissecting aneurysm of the aorta, a catastrophic but treatable lesion now being seen more frequently as a cause of superior vena cava obstruction.

The report by Dr. Reddy, et al., appears on page 1047.

Bronchoscopy and mediastinoscopy have come of age during the past 20-25 years. Bronchoscopy has assumed almost routine status in the diagnostic work-up of primary lung cancer, a frequent cause of SVC obstruction. Cytological diagnosis of sputum in bronchogenic carcinoma has become well established. Tissue diagnosis from biopsy of enlarged lymph nodes adjacent to the superior cava has been facilitated by mediastinoscopy. In the case of Reddy, *et al*, mediastinoscopy was used to confirm that the substernal mass was goiter.

In this connection, a note of caution might be mentioned regarding the hazards of mediastinoscopy in the presence of a dissecting aneurysm; the possibility of a dissection as a cause of the SVC syndrome should be excluded before performing mediastinoscopy. In the context of this consideration, CT scanning, echocardiography, and MRI, noninvasive procedures, and the invasive procedure of aortography should provide decisive information. Isotopic scanning of the thyroid and of the peripheral veins, including the vena cava, have become useful investigative procedures in the SVC syndrome. The former can identify with certainty if a mediastinal mass is thyroid; the latter can, as in the case reported in this issue, be used as a substitute for contrast venography, though less precise since it provides information as to blood flow patterns rather than anatomic detail.

In summary, the diagnosis of SVC obstruction usually can be made from the symptoms and physical findings. To determine the primary cause of the obstruction, its location, and the pattern of collateral circulation, special tests are necessary. These include plain chest x-rays, venography, contrast or isotopic, aortography, CT scanning, echocardiography, magnetic resonance scanning, radioactive iodine scanning, bronchoscopy, mediastinoscopy, and biopsy of regional nodes or mass. Additional diagnostic aids are venous pressure determinations and infrared thermography.

Although surgical expertise for removal of a substernal goiter in 1954 was already available at Indianapolis General Hospital (Wishard Memorial Hospital), as in our case, most present day vascular surgical techniques, such as thrombovenectomy, by-pass grafting, and direct reconstruction of the vena cava to relieve obstruction, are products of the intervening years. In some cases, as in ours, removal of the mass producing extrinsic compression promptly relieved the venous hypertension. When the cava is occluded, as in thrombosis, or when the compressing, encircling, or invading mass cannot be removed, as in diffuse mediastinal fibrosis, additional treatment may be needed.

Some cases show remarkable tolerance to the obstruction, usually those in which onset has been gradual and the resulting venous hypertension not severe. There have been isolated case reports of survival with untreated benign lesions for 36 and 50 years. Acute worsening of chronic obstruction in benign cases may occur, as in cystic degeneration and/or hemorrhage in an adenomatous substernal goiter or in-

flammatory exudation and edema in a caseating granuloma.

Ingenious surgical procedures have been devised to relieve obstruction with by-pass or with reconstruction: grafts from the SVC or innominate vein to right atrial appendage or to intrapericardial SVC, grafting from the jugular vein to the right atrial appendage or to the intrapericardial SVC, and anastomosis of azygos vein directly to the intrapericardial SVC, the right atrial appendage, or directly to the inferior vena cava. Reconstruction of a stenotic SVC, after thrombovenectomy, has been accomplished around a 40F catheter passed from the right atrial appendage to the proximal patent cava through the area of narrowing.

Other methods include simple rerouting of flow from superior cava to inferior cava by means of a subcutaneous reversed saphenous graft from external jugular to femoral vein, and a temporary extracorporeal shunt utilizing a Silastic tube connecting the proximal SVC via the brachial vein with the distal SVC reached retrograde via the saphenous vein; this has been proposed as of possible benefit to patients with advanced malignant disease and severely symptomatic SVC obstructive symptoms. Preservation of patency of the reconstructed SVC is said to be promoted by azygos vein ligation and the temporary creation of a carotid-to-external jugular vein fistula.

In general, by-pass and/or reconstruction of the SVC is to be avoided, since complications are frequent. In an attempt to control the bleeding, the surgeon may ligate functionally impor tant collateral veins. Many of these patients can be tided over the symptoms of the acute phase by using non-surgical measures, such as low sodium diet, diuretics, antibiotic therapy of associated infections, chemotherapy and/or radiation of causative malignant neoplasms, and possibly cortico-steroids, until an effective collateral system spontaneously develops.

For patients with substernal goiter, other circumscribed benign tumors, and aortic aneurysms, surgical removal will likely be feasible and will relieve the obstruction. Ablative treatment of goiter with radioactive iodine, now widely available, was in its infancy in 1954. The use of thyroid hormone to shrink substernal goiter has been used in some cases of SVC obstruction due to goiter, both preoperatively and as definitive treatment when surgical therapy was contraindicated.

Although the prognosis in SVC obstruction due to malignant lesions remains poor, improvements are occurring. Lymphoma is responsive to modern treatment. Chemotherapy is becoming more effective. Promising immunologic approaches in therapy are in the offing. Public awareness of the dangers of tobacco use should over time bring about a decrease in incidence of primary lung cancer as a cause of SVC obstruction. Heparin, occasionally helpful in superior caval thrombosis, has become a familiar therapeutic agent during the past 30 years. Thrombolytic drugs, the use of which in both venous and arterial disease is expanding, may have a place in treating SVC obstruction in certain cases of acute onset, as in caval thrombosis caused by Swan-Ganz catheterization and similar venous invasive procedures.

Dr. Reddy and co-authors are to be commended for their contribution. Their report should promote more general recognition of the SVC syndrome and emphasize the fact that some of these cases can be cured.

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Needed: Asthma Patients

Dr. Debra Myers is conducting a 14-week outpatient study of asthma patients at Methodist Hospital, Indianapolis.

The purpose of the study is to test a new asthma medication produced by the Fisons Corp.

Asthma patients interested in participating must be between the ages of 18 and 70, and be using theophylline. To be accepted in the study, women must not be capable of childbirth.

If you have patients interested in this project, have them call Mary Ann Payne, R.N., at (317) 929-3609 between 9 a.m. and 3 p.m.

Obstruction of the Superior Vena Cava and Trachea from Benign Goiters

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BENIGN GOITERS rarely cause vena caval or airway obstruction. Two case reports are presented of benign goiters that caused significant obstruction: The first case where an intrathoracic goiter produced obstruction of the superior vena cava (SVC) with tracheal deviation and subclinical stenosis and the second case where a benign cervical goiter produced a fixed upper airway obstruction. This second case is unique because it is the first well-documented case of tracheal obstruction caused by a purely cervical goiter with no intrathoracic extension.

Case No. 1

A 45-year-old man was admitted with the complaints of face, neck, and bilateral hand swelling for several months. For a month before admission, he had noticed the new onset of dysphagia and dyspnea, the latter being worse upon inspiration or when supine. He denied chest pain. He had a barium esophagram performed three years prior to admission for unclear reasons which showed esophageal narrowing, but no follow-up evaluation occurred.

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FIGURE 1

On physical examination his blood pressure was 185/85, pulse was 80, and respiratory rate was 18 without distress or stridor. His neck showed prominent jugular venous distension to the angle of the mandible bilaterally and soft tissue fullness in the midline. His trachea was deviated to the right, and his lungs were clear with normal breath sounds. He had a grade III/VI systolic ejection murmur heard best in the aortic area. His legs had 2-3 mm of pitting edema. His neurologic examination was normal.

His chest radiograph revealed cardiomegaly and a mediastinal mass with tracheal deviation and compression. Spirometry showed blunted peak inspiratory and expiratory flow rates. Thyroid hormone concentrations were normal. A CT scan of his neck and chest demonstrated a large superior mediastinal mass, contiguous with a diffusely enlarged cervical thyroid causing deviation of the trachea and esophagus to the right (*Figure 1*).

Technitium venography of the right arm showed delayed return of flow to the right atrium consistent with superior vena caval obstruction. Mediastinoscopy confirmed the mass to be a multinodular goiter. The patient underwent an exploration of his neck with removal of a benign cervical multinodular goiter with substernal extension.

Case No. 2

A 65-year-old diabetic woman was admitted with a two-month history of stridor, dysphagia, and 30-pound weight loss. Ten years before admission, she had undergone an uncomplicated thyroidectomy for unclear reasons. She had remained euthyroid both clinically and chemically without additional therapy. One year prior to admission she noted cough and dyspnea, but no stridor.

She was noted to have thyromegaly, but was still clinically and chemically euthyroid. Her total thyroxine level at that time was normal. Plain films and CT scan of her neck showed cervical and subglottic tracheal stenosis. Flow volume loops showed a truncated inspiratory and expiratory pattern consistent with fixed upper airway obstruction (*Figure 2*). Her physician prescribed Lugol's iodine solution which she took daily during the year prior to admission.

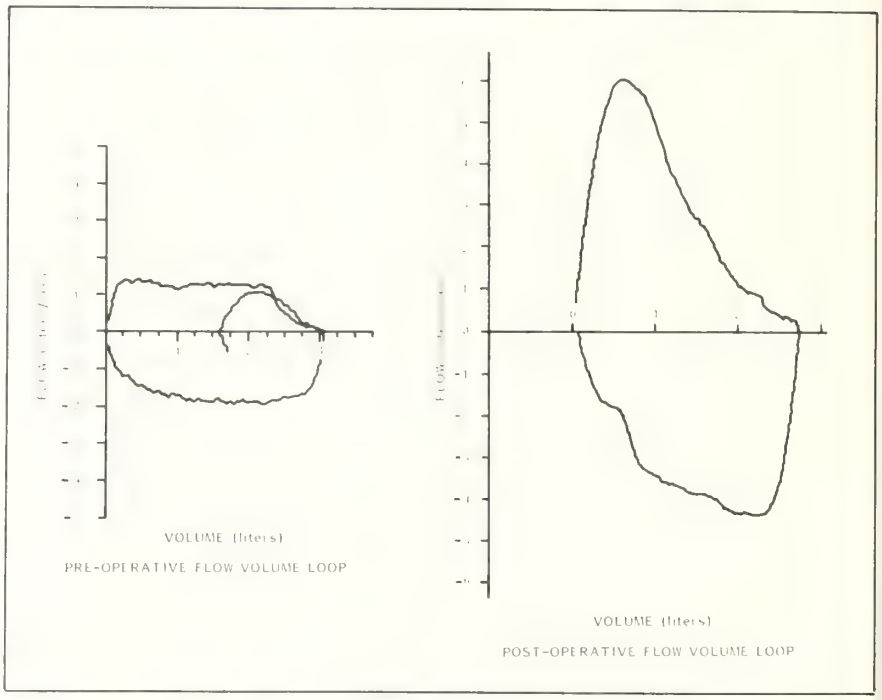


FIGURE 2

Upon presentation she had a blood pressure of 142/70, a pulse of 100, and a respiratory rate of 16. Although she was comfortable at rest, she had a harsh cough with inspiratory and expiratory stridor during normal conversation. She had no exophthalmos or extraocular muscle weakness. Her thyroid measured 6×3 cm in the left lobe, 4×3 cm in the right lobe, and was firm and nontender. The respiratory examination was remarkable only for stridor. The cardiac examination was normal. Her neurologic examination revealed brisk deep tendon reflexes.

Laboratory examination showed elevation of her total thyroxine level at 16.6 ug/dl (normal 4.5-11.5) confirming the clinical impression of hyperthyroidism. Soft tissue films again showed cervical tracheal stenosis. Laryngoscopy and bronchoscopy were normal except for the cervical tracheal stenosis. After stabilization with propranolol, she underwent an uncomplicated thyroidectomy with resolution of her stridor. No substernal extension of thyroid tissue was noted intraoperatively. Histology confirmed the mass to be a multinodular goiter. Her postoperative flow volume loop confirmed resolution of her fixed upper airway obstruction (*Figure 2*).

Discussion

Most cases of SVC syndrome have been associated with malignant disease, although "benign" etiologies have been reported, including mediastinitis, mediastinal tumors, thrombophlebitis with thrombosis, aneurysms, and cardiac abnormalities.[1] Over the last four decades, there have been four large literature reviews[2-5] exploring the causes of SVC syndrome showing several important trends: 1) Prior to 1949, 25-50% of SVC obstructions were caused by intrathoracic malignancies, compared to approximately 75% in the mid-1960s. 2) Of the benign causes of SVC obstructions, mediastinitis and thoracic aneurysms are declining, but benign intrathoracic tumors remain a constant, rare cause, between 1-4%. 3) Intrathoracic goiters account for less than 2% of SVC obstructions. The increase in the ratio of malignant to benign SVC obstructions probably represents both an increase in the incidence of bronchogenic carcinoma and a decrease in infectious thoracic complications, particularly syphilitic aneurysms and tuberculous or fungal mediastinitis.[6-8] In addition to these large literature reviews, several authors have highlighted intrathoracic goiter and SVC syndrome.[9-16] Our first case demonstrated not only SVC syndrome but subclinical tracheal stenosis as demonstrated by flow-volume loop.

A review of the literature suggests that stridor from benign goiter is rare, although tracheal deviation occurs more frequently.[15] The second case reported above is the first well-documented case of a purely cervical goiter causing tracheal obstruction. In our patient's case, the trachea may have been anchored in scar tissue from her prior partial thyroidectomy, producing stenosis instead of displacement in response to her enlarging cervical goiter. The Lugol's iodine supplemen-

tation may have contributed to enlarging of the goiter. One major problem in comparing reports on the topic of airway obstruction in goiters is the lack of a uniform definition for "intrathoracic" thyroid glands.[17,18] McCort suggests that the term "intrathoracic goiter" be reserved for those cases in which the major portion of the gland is found within the thorax.[17] Others define "intrathoracic goiters" as those which extend to the aortic arch or behind the manubrium. Pooling several reports, the prevalence of intrathoracic extension ranges from 0.25% to 12.9% of all thyroidectomies.[17] This is almost certainly greater than the actual prevalence of intrathoracic goiters as it probably reflects the bias of selecting patients for surgical extirpation.

In 1977, Jauregui examined 20 consecutive patients with nontoxic goiters for evidence of airway obstruction.[19] None had dyspnea as the chief complaint, but nine of 20 patients noted exertional dyspnea or choking sensation, two of 20 had intractible cough, and one of 20 had stridor on effort. Upper airway obstruction was noted in 12 of 20 (60%) by flow volume loops and in 16 patients (80%) by combined radiography and spirometry, 11 of whom showed improvement in subjective or objective airway obstruction on levothyroxine or surgical therapy.

In contrast to gradual, or subacute, airway compression as discussed above, authors have reported acute respiratory failure with tracheal obstruction from benign goiters.[20,21] In each case, the goiter extended behind the manubrium and the event occurred in the setting of concurrent upper or lower airway infection or intrathyroidal hemorrhage.

Therapeutic intervention for SVC syndrome from intrathoracic goiters is controversial, with support given to both medical[12,19] and surgical[1,6,18] approaches. The intrathoracic goiter in the first case above may have been successfully managed conservatively three years before admission, the only known problem being esophageal narrowing. However, at this admission, his problems had progressed to include SVC syndrome and airway compromise, prompting surgical intervention. The second case, with clinically evident tracheal stenosis, had clear indications for thyroidectomy.

Benign goiters can cause potentially life-threatening obstruction, and this is not limited to those with intrathoracic extension. All goiters, whether cervical or intrathoracic, should be closely observed because adjacent structures may become compressed by either slow or rapid thyroid enlargement.

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Massive GI Bleeding Secondary to Small Bowel Lesion: Two Case Reports

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Abstract

Small bowel distal to the ligament of Treitz is the least in frequency for location of G.I. bleeding and most difficult to diagnose preoperatively. To date, no direct means of examining the small bowel is available. Indirect means are not always accurate and may also be misleading at times. Two clinical cases of massive G.I. bleeding are presented, the exact diagnosis of both being made only at the time of laparotomy. Cure is achieved by resection of the lesion in continuity with the portion of the intestine containing the pathology. Most of these lesions are congenital and usually benign, since only 5 per cent of the gastrointestinal malignancies are located in the small intestine.

THE FOUR MOST COMMON sources of GI bleeding in decreasing order of frequency are: the stomach and duodenum, esophagus, colorectal and the small bowel distal to the ligament of Treitz. Even though the small bowel is the least in frequency, it is the most difficult to diagnose preoperatively. However, once the diagnosis is established, it is probably the most easily corrected surgically since it usually requires only a small bowel resection with end-to-end anastomosis of the normal remaining intestine.

Many times, through a process of exclusion, a persistent GI hemorrhage is localized to the small bowel and only at laparotomy is a precise diagnosis made and appropriate treatment rendered. This is so, since today's medical technology does not allow us to perform a *direct* examination of the small intestine except for a barium study which is not always reliable.

Fiberoptic endoscopy is routinely used in evaluating the esophagus, the stomach, proximal duodenum, colon and rectum. Consequently, an accurate diagnosis of gastrointestinal bleeding can usually be made in all pathological entities proximal to the ligament of Treitz and distal to the ileocecal valve.

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Only indirect means such as radioactive scanning, angiography,[1] segmental staining[2] and small bowel barium studies are available to try and localize a bleeding lesion in the small intestine. It is also interesting to recall that 5% of gastrointestinal malignancies and 25% of benign gastrointestinal lesions are found in the small intestine.[3] Pathological entities,[4] responsible for bleeding in the major anatomical portions of the GI tract, in order of decreasing incidence, are listed in the following four tables:

TABLE 1: Gastric and Duodenal Lesions

1. Duodenal ulcer
2. Hemorrhagic gastritis
3. Gastric ulcer
4. Carcinoma of the stomach
5. Polyps

TABLE 2: Esophageal Lesions

1. Bleeding esophageal varices
2. Mallory-Weiss tears
3. Esophagitis
4. Carcinoma

TABLE 3: Colorectal Lesions

1. Diverticulosis
2. Benign polyps
3. Carcinomas
4. Ulcerative lesions (benign)
5. Hemorrhoids
6. Fissures
7. Arteriovenous malformations

TABLE 4: Small Bowel Lesions (distal to the ligament of Treitz)

1. Hemangiomas and arteriovenous malformations
2. Benign lesions (fibromas, adenomas, neurofibromas, leiomyomas)
3. Meckel's diverticulum and multiple small diverticula
4. Carcinomas (metastatic and primary)
5. Zollinger-Ellison Syndrome

The criteria for deciding which patients should be operated upon are:[4]

1. Any patient who has lost 1500 to 2000 cc. of blood.
2. Blood loss that causes an acute fall in the hematocrit to 25 or below.
3. Acute blood loss resulting in syncope.
4. Blood loss that, after the patient's vital signs have been stabilized, requires more than 1000 cc. of blood per 24 hours to maintain a stable hematocrit and blood pressure.

The following case reports will help to illustrate some of the difficulties in establishing a preoperative diagnosis in a patient with massive bleeding from a small bowel lesion:

Case 1

A 39-year old white man was admitted on 2-12-85 to the Intensive Care Unit with frequent melanotic stools. The patient was awake and alert and had no previous history of GI bleeding. He denied any aspirin ingestion or ethanol abuse.

PMH and ROS: Unremarkable.

VS: BP 100/60, P 120, R 20, T 98.9.

PE: Unremarkable except for the appearance of a pale and diaphoretic patient whose rectal exam showed only melanotic material compatible with fresh blood clots. A central venous pressure catheter was inserted in the SVC via the right subclavian vein and the work-up was begun. H&H upon admission was 7.4 and 22.3 and the coagulation workup was within normal limits. Esophagogastroduodenoscopy was entirely normal. Colonoscopy was attempted, but because of copious amounts of reddish/black freshly digested blood could not be performed properly. Consequently, it was not informative in this case. Mild hypoproteinemia was present; the electrolyte and other chemistry studies were normal.

The patient was operated upon the day of admission, having already had 10 units of packed RBCs and two units of fresh frozen plasma. At laparotomy, an ileal leiomyoma was found with blood in the small bowel distal to it. A small bowel resection was performed, removing the lesion with end-to-end anastomosis of the remaining normal bowel. The patient's bleeding was immediately controlled following this procedure. Since the patient was stable, an incidental appendectomy was performed with the hope of avoiding another possible operation later on.

Postoperatively, he developed pulmonary embolism localized to the left lung, which was treated successfully with intravenous Heparin. The total amount of blood the patient received during hospitalization was 16 units of packed RBCs (over a three-day period), eight units of fresh frozen plasma and two units of plasma protein fraction. Also, 25 grams of albumin was given each day for five days because of hypoproteinemia. He was discharged on the eighth postoperative day with a H&H of 13.9 and 40.5 and with a BP of 140/80, P 104, R 20 and T 99.6. To date, the patient remains completely normal and has not had any problems since his operation.

Case 2

A 15-year-old white woman was admitted to the hospital on 11-28-85 with gross melena and no prior history of any GI bleeding. The patient had taken 10-15 aspirin tablets on her own at home because of headaches over the last three days.

PMH, ROS and Family HX: Completely unremarkable.

PE: BP 124/68, P 124, R 20, T 99.8° F.

The patient was awake and alert, but was pale and looked somewhat apprehensive. Her physical examination was completely unremarkable except for mild obesity (180 pounds). The rectal exam revealed only melena. The patient's BP was remarkably stable in spite of the initial H&H of 4.2 and 13.4. She was immediately transfused with five units of packed RBCs and her H&H rose to 8.4 and 24.9. Coagulation work-up was within normal limits. The same day, an esophagogastroduodenoscopy as well as Meckel's scan were within normal limits. Her BP on the second hospital day ranged from 120/80 to 110/70 with P 114.

On 11-30-85 the patient had a normal barium enema and a technitium 99 pyrophosphate-tagged red blood cell study was interpreted as normal. Sigmoidoscopy revealed only fresh melanotic clots in the rectosigmoid area. The patient's H&H on 11-30-85 ranged between 8.7 and 26 to 10.8 and 32. On 12-1-85 the H&H dropped to 7.8 and 23 and it was obvious that, in spite of a negative work-up, the patient had very significant gastrointestinal bleeding, the small bowel being the most likely source. Thus, she was operated upon on her third hospital day at which time a 6 cm. ileal Meckel's diverticulum was found with blood distal to it.

The Meckel's diverticulum was resected in continuity with the small bowel and an incidental appendectomy was performed. Examination of the specimen revealed heterotopic gastric mucosa in the Meckel's diverticulum with peptic ulceration of the intestinal mucosa and hemorrhage opposite the Meckel's lesion. Postoperatively, the patient's H&H rose to 11.5 and 34.4 and she was immediately stabilized.

She was discharged on 12-5-85, her fourth postoperative day, with H&H of 12.8 and 39.7. Blood pressure upon discharge was 112/76, pulse ranged between 100 and 80, respirations were 20 and temperature was 98.6. During the patient's hospital stay, she received a total of 17 units of packed RBCs, five units of fresh frozen plasma and one unit of plasma protein fraction. The patient had no postoperative complications and to date remains completely asymptomatic.

Discussion

The preceding two histories illustrate the difficulty in making a precise preoperative diagnosis in cases

of massive GI bleeding secondary to a small bowel lesion. Both patients had normal esophagogastroduodenoscopy, and a colon examination could not be performed accurately because of large amounts of melena present in the large intestine. The patient in Case No. 1 had his operation on the day of admission since his vital signs were not stable and his bleeding was not only massive but also continuous. It was of utmost importance to control the patient's bleeding immediately and thus laparotomy was diagnostic as well as a therapeutic maneuver in his case.

The patient in the second case had normal blood pressure and was stable even though the bleeding was just as significant but *intermittent* in nature. This fact allowed a more detailed preoperative work-up, which again did not localize the lesion preoperatively. Angiography was considered in both cases but not done because of its own inherent pitfalls and potential complications. Thus, also in the second case, laparotomy was both a diagnostic and therapeutic maneuver.

Summary

Massive gastrointestinal bleeding should be treated aggressively in both the young and the aged group of patients. Small bowel lesions are usually more frequent in the younger group. Older patients do not tolerate hemorrhagic shock as well, because of the frequent presence of systemic diseases, cardiovascular being the most common type, and require an even more aggressive approach.

Admission to the Intensive Care Unit is mandatory and CVP line placement for blood transfusions and venous pressure monitoring are essential. Arterial line placement as well as Foley catheter insertion should also be considered. Immediate esophagogastroduodenoscopy, sigmoidoscopy and possible colonoscopy should be performed. If the lesion is not diagnosed by this time, studies such as a scan for Meckel's diverticulum, technitium 99 tagged RBC study and angiography should be seriously considered.

If the patient has lost five to six units of blood and continues to bleed or if the vital signs are not stable, surgery usually is inevitable. The arguments, that the patient is "too old," "too sick," or "can't tolerate surgery" because of his heart disease or other systemic problems are poor. It is precisely this group of patients who cannot tolerate prolonged hypotension and hypovolemia since this may very easily result in a cardiac arrhythmia, a myocardial infarction and subsequent death.

If the bleeding and hypovolemia are not quickly controlled, the patient may reach that stage in the hemorrhagic shock cycle where the Starling's law principle would go into effect. The younger patients have a better cardiac reserve and can tolerate bleeding for longer periods of time. However, again an aggressive work-up is a must since surgery is usually inevitable providing there are no coagulation disorders.

Small bowel lesions are usually present in a younger patient population and by their very nature are most difficult to diagnose preoperatively, since endoscopy of the small intestine is not an available tool in this day and age. All other media, such as scans, stains, radioactive tagged red blood cell studies and angiography are not always accurate but should be considered providing the proper expertise is available in performing these tests and interpreting their results.

At laparotomy, unless the patient has an AV malformation which may be very difficult to visualize, during a thorough exploration and segmental clamping if necessary, the lesion can usually be found and treated successfully with excision.

Conclusion

The preceding two case presentations demonstrate the recalcitrant nature that small bowel lesions may present when they are responsible for gastrointestinal bleeding. A combination of close monitoring in the I.C.U. and aggressive diagnostic work-up is necessary for prevention of irreversible shock and successful management of such cases.

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Integrated Approach to the Management of Pain

A National Institutes of Health Consensus Report Synopsis

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THERE HAS BEEN great progress made in understanding and assessing the multidimensional character of pain, advancing the state of pharmacological techniques and developing a variety of nonpharmacological approaches for the treatment of pain. In addition, recent years have witnessed the advent and growth of multidisciplinary pain clinics.

There is reason for concern that the education and training of many health care professionals, for example, in schools of medicine, nursing, dentistry, and physical therapy, do not place adequate emphasis on contemporary methods of pain assessment and management.

How Should Pain be Assessed?

Pain is a symptom that arises in response to noxious stimulation or tissue injury. In some instances, pain may persist after the tissue damage is healed or in the absence of evident tissue damage. Clinicians have found it useful to classify pain into three major categories based on etiology. A. Pain following acute injury, disease, or some type of surgery. B. Pain associated with cancer or other progressive disorders, primarily chronic malignant pain. C. Pain of a chronic nonmalignant nature.

Pain is a subjective experience that can be perceived directly only by the sufferer. It is a multidimensional phenomenon that can be described by pain location, intensity, temporal aspects, quality, impact, and meaning.

Assessment by verbal self-reporting and behavior measures have been developed as well as measured by personal diaries kept by persons in pain.

Direct observation by the clinician can document pain behavior.

The assessment of pain in children presents special problems and is the subject of current research interest. Clinical impressions suggest that children in pain may frequently be undertreated.

The clinical assessment of the person with pain begins with diagnostic evaluation and clarification of the goals of therapy. At present, few valid and reliable acute pain measures exist. With chronic pain, assessment may be more productively focused on affective and evaluative aspects of the pain experience, as well as on its history and context.

Acute Pain: In acute pain, assessment tools such as the visual analog scale may be adapted to the needs of the bedside and are easy to use.

Chronic Pain Associated with Malignant Disease: In assessment of chronic pain associated with malignant disease, caregivers should review evidence of change in appetite, activity, social interaction, sleep patterns, and the impact of pain in the quality of life.

Chronic Pain Not Associated with Malignant Disease: The primary objective when evaluating individuals with chronic pain not associated with malignant disease should include the level of function as it may not be possible to achieve complete relief of pain. Both self-report measures and direct observation of motor activity are useful. Measures of psychological function may be important in evaluating the individual's emotional state and coping mechanism.

Evaluation of treatment effectiveness for pain has relied largely on clinical impressions and should include measures that are useful for longitudinal study of change over time such as an increase in physical activity as well as measures of absolute endpoints. This includes increased activities of daily living, improved patterns of socialization, and return to employment.

How Should Pharmacological Agents Be Used in an Integrated Approach to Pain Management?

All drug therapy should be individualized. In acute pain, treatment frequently has been with doses of narcotic analgesics that have been too low or given with too long an interval between doses. Concern about the problems of addiction and respiratory depression is greater than the actual risk. Approaches to addressing such problems include educating health care

This synopsis is based on an NIH consensus development conference conducted earlier this year. The complete consensus statement is available from the Office of Medical Applications of Research, National Institutes of Health, Bldg. 1, Rm. 216, Bethesda, Md. 20892.

professionals about analgesic drugs and making them aware of how their attitude may affect their use or nonuse of narcotic analgesics effectively.

One of the innovative ways that may provide effective individual analgesia and comfort for these people has been the development of patient-controlled analgesia (PCA).

Chronic Malignant Pain: Research has shown that narcotic analgesia given on a scheduled basis in adequate doses is an improvement over the former p.r.n. method of physician-ordered narcotic use.

An additional issue of concern in this patient population is the development of tolerance. Physical dependence does occur but is not of clinical significance in advanced disease. Some people with metastatic cancer cannot achieve pain control by systemic narcotics. The addition of other drugs such as steroids or nonsteroidal anti-inflammatory drugs to the regimen may improve pain control without enhancing drug toxicity. In addition, other modalities of therapy such as nerve blocks, neurosurgical procedures, radiation therapy, chemotherapy, and other appropriate interventions should not be ignored in the care of the individual with cancer pain. The exploration of new routes or methods of narcotic administration including continuous subcutaneous infusion, epidural and intrathecal routes, mucous membrane or transdermal absorption, oral formulations with slow release and absorption, and PCA.

Chronic Nonmalignant Pain: The established analgesics along with tricyclic antidepressants have been tried with reasonably good results. They are most effective when clinical depression accompanies the pain. Special care should be taken to avoid overtreatment of these individuals, particularly with drugs that have a real risk of side effects or addiction.

How Should Nonpharmacological Interventions Be Used in an Integrated Approach to Pain Management?

Experienced clinicians report some success with a variety of nonpharmacological modalities including acupuncture, biofeedback, transcutaneous electrical nerve stimulation "TENS", hypnosis, physical therapy, behavioral approaches such as coping strategies, desensitization, modeling, operant conditioning, and relaxation. Diagnostic and therapeutic nerve blocks of many parts of the body may be useful in pain management. Acupuncture and TENS are most commonly used for chronic musculoskeletal disorders. Biofeedback is often used for the treatment of headaches and painful vascular conditions.

Behavioral therapies are used for some individuals with chronic pain.

Biofeedback involves giving individuals information about physiological responses and ways of exercising voluntary control over these responses. It is useful in muscle tension, headaches and migraine headaches. A variety of relaxation techniques can be used in reducing pain associated with stress or anxiety.

Some persons may require a simultaneous or sequential combination of multimodal approaches incorporating pharmacological and nonpharmacological approaches in pain management.

What Is the Role of the Nurse in the Integrated Approach to Pain Management?

The nurse may be the first health care provider to encounter the person experiencing pain as well as to identify the problem of uncontrolled pain. Thus, many opportunities exist for nurses to enhance the effectiveness of care delivery to individuals with pain. The nurse can be the key link in facilitating communication between the individual and the family and other members of the health care team.

For those individuals who experience chronic pain, nurses are in a pivotal position to assess the congruence between the person's condition, need for care, and the community health, public health, or home health resources available for the management of this individual in the non-institutional setting.

For individuals managed at home, the nurse is frequently the professional who provides the care and maintains ongoing communication with the individual and family, monitors the situation, and serves as a link with other care providers.

The role of the generalist nurse should include preoperative patient education, nursing care plans that reflect individual medication schedules, and the implementation of nonpharmacological methods.

The nurses specialize in the assessment and management of persons with pain and may serve as part of an intradisciplinary team or may be individually identified as a resource within a particular setting.

The role of the nurse with advanced preparation should include clinical management, responsibilities such as titration of analgesics and assessment and participation in the use of both pharmacological and nonpharmacological modalities. In addition, the provision of consultation and educational services to other members of the nursing staff and an active participation in research is warranted.

What Are the Directions for Future Research in Pain Management?

Future research should be directed to identifying the factors that facilitate or hinder the dissemination and implementation of up-to-date information and clinical practice in the treatment of pain.

Determine the appropriateness of using existing research measures and clinical settings and to evaluate the validity as adjuncts to clinical judgments in pain assessment.

Identify the specific factors associated with outcome within treatment modalities.

Assess more fully the potential value of each of the nonpharmacological approaches to pain in acute and chronic pain states through control studies in a specific population.

Discover and develop more analgesic drugs with larger margins of safety.

Continue research on endorphins, enkephalins, and narcotic receptors that shows promise of producing bet ter analgesic drugs.

Develop and evaluate methods of drug delivery, including PCA, sustained release formulations, epidural administration, and other improved delivery systems.

Conduct epidemiological studies of the incidence and prevalence of pain.

Conclusions

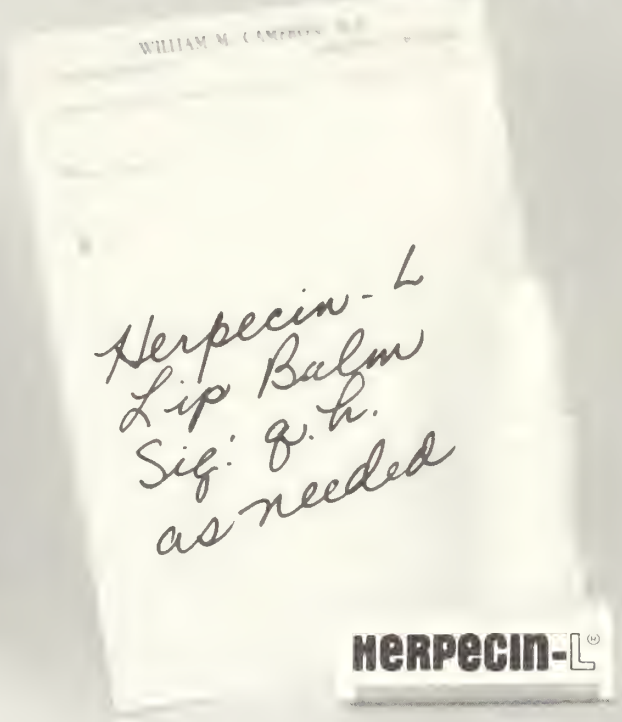
Pain is an important and complex phenomenon. Accurate pain assessment requires classification by type of pain and includes the establishment of treatment objectives.

An integrated approach to the assessment and management of pain brings greater options to individuals seeking the alleviation of pain.

New methods are available to deliver drugs effectively with less toxicity. Insight, education, attitude change, and accountability in the professional practice of health professionals will influence positively the implementation of adequate pain therapy. Nonpharmacological methods are playing an increasing role in the treatment of some types of pain.

All members of the multidisciplinary health team urge effective teaching about the nature of pain and recommend that the integrated approach to pain management be included in both formal and continuing education of the various members of the pain team.

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The Epicardial Coronary Arteries: Proper Necropsy Examination

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EXAMINATION OF THE major epicardial coronary arteries (left main, left anterior descending, left circumflex, right) constitutes only part of the examination and dissection of the heart. However, the high frequency of fatal coronary events in this country[1] (sudden coronary death, acute myocardial infarction, chronic congestive heart failure following a healed myocardial infarction) make routine and proper examination of the major epicardial coronary arteries imperative. Methods used in the necropsy examination of the coronary arterial system have ranged from simple gross dissection and histologic evaluation to the use of various techniques of post-mortem coronary angiography.

Gross Examination

Two major methods of coronary arterial dissection at necropsy have been used over the years: *longitudinal sections* and *transverse sections* (cross-sectional segments) (*Table*).

The *longitudinal method* of coronary artery sectioning involves placing scissors into the left and right coronary ostia and cutting the arterial wall in a direction parallel to its longitudinal axis. This examination appears to have its origin as an extension from the early methods of opening the heart in the "direction of flow" (Virchow's method[2] and modification[3]). The results of this technique convert the arterial tree from a three-dimensional vessel with a lumen to a two-dimensional flat surface without a lumen.

The only advantages to the longitudinal method of coronary examination are its simplicity and quickness. The many disadvantages of this method, however, far outweigh the advantages. Using the longitudinal method the examiner can only *suspect* coronary artery disease. The *detection* and *determination* of *degree and extent* of stenotic atherosclerotic lesions become crude at very best and in most instances these observations are impossible. Qualitative evaluation of atherosclerotic plaque with this technique is only possible by comparison of longitudinally opened vessels with a panel of photographs.

For the grading of atherosclerosis in human coronary arteries, a committee of the American Heart Association prepared two series of color photographs of arteries which are opened lengthwise and which show atherosclerotic lesions of increasing severity.[4] Specimens are graded qualitatively by matching them with the picture on the panel which *resembles most closely* the prevailing degree of atherosclerosis. The overwhelming majority of renowned cardiovascular pathologists[5-13] have discarded this method of coronary arterial dissection. Only one center continues to publish material based upon longitudinal dissection of the coronary arteries.

Crawford[13] best summarizes the longitudinal coronary arterial dissections methodology in the following quotation:

"The most important lesson for the trainee pathologist in this area is a negative one: *in no circumstances should the coronary arteries be attacked by inserting so-called artery scissors through the ostia and slitting open the vessels along the length of their course.* The fact that, frequently, senior and highly respected pathologists may be seen carrying out this assault is irrelevant. No procedure could have been more expertly designed to destroy much of the evidence that is being sought. Once the vessel has been opened in this way it becomes impossible to estimate the presence, degree or extent of stenotic lesions; the intima is disrupted by the ravishing scissors; and recent thrombi are irretrievably displaced. Add to this the fact that the possibility of carrying out a satisfactory histological study is gone forever and it will be realized that longitudinal slitting, hallowed though it may be by our predecessors' usage, is not a procedure to be tolerated today.

"The only acceptable technique for primary opening up of the coronary arteries in the post-mortem room is by multiple transverse sectioning at right angles to the course of the vessel. The best instrument for the purpose is a surgical scalpel with detachable blades; a fairly large blade (No. 22) with rounded belly is the most suitable."

The *transverse method* of sectioning the coronary arteries involves multiple transverse sections at right angles to the longitudinal axis of the artery

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by a surgical scalpel. This method of sectioning permits an evaluation of cross-sectional area *luminal reduction* by atherosclerotic plaque, thrombus or both. Determination of cross-sectional area narrowing is important since luminal area reduction is one of the causes for reduced coronary blood flow: "The effectiveness of a given localized constriction in reducing flow may be large or small and will vary in inverse relation to the peripheral resistance of the vascular bed and lumen area of the constricted segment and in direct relation to the axial length of the constricted area flow, and blood viscosity."[14]

Serial cross-sectioning of the artery at 1-,2-,3-,4-, or 5-mm intervals allows satisfactory calculation of the length and degree of luminal stenoses. This evaluation of clinically significant luminal narrowing is not possible with the longitudinal method. Further evaluation of the coronary cross-sections may take one of two courses: (1) complete serial sectioning of the major coronary arteries, recording of various degrees of cross-sectional area reduction and removal of selected cross-sections for histologic evaluation, or (2) removal of the entire coronary tree and histologic processing of *each* cross-sectional segment.[15] The latter method has been used for quantitative analysis of various subsets of fatal coronary events.[16-22]

Advantages of the transverse method over the longitudinal method of coronary artery dissection include the ability to *detect* the presence of coronary disease as well as *determine* the extent and degree of stenosis, *preserve* the presence of *thrombi* and hemorrhage into atherosclerotic plaque, and *detect* the presence of *coronary arterial dissections* which might be created by trauma, catheters or occurred idiopathically. Transverse sectioning is currently the most widely used method for necropsy evaluation of coronary arteries.[5-13] The only disadvantage to this method of examination is the increased amount of time required for the dissection.

TABLE
Comparison of Coronary Arterial Dissection Techniques

LONGITUDINAL SECTIONING METHOD

Advantages	Disadvantages
1. Simple	1. Can only *suspect* coronary disease
2. Quick	2. Cannot adequately determine the presence of atherosclerotic plaque nor its degree and extent.
	3. Cannot perform *quantitative* analysis of luminal narrowing and qualitative amounts of plaque can only be determined by comparison to published reference panels.
	4. Can detect coronary thrombi but cannot assess amount of luminal occlusion
	5. May dislodge loosely adherent thrombus
	6. Cannot reliably predict clinically significant coronary arterial stenoses

TRANSVERSE SECTIONING METHOD

Advantages	Disadvantages
1. Can *detect* coronary disease	1. Time-consuming
2. Can determine the degree and extent of coronary atherosclerosis	
3. Can quantitate amounts of arterial disease	
4. Can determine the amount of luminal cross-sectional area reduction by plaque, thrombus or both	
5. Preserve the presence of thrombus and determine degree of luminal occlusion	
6. Easy to perform	
7. Can reliably determine clinically significant coronary arterial stenoses.	

Specialized Methods of Examination

Several methods of postmortem coronary angiography are available for more specialized evaluation of coronary artery disease. Various radiopaque injection media have been tried in the past[23] including, lead phosphate in agar[24], mixtures of lead carbonate, mercuric sulfide and gelatin[25], and barium sulfate-gelatin mixtures.[10] These materials may be injected into the coronary arteries directly or indirectly through the central aorta.

The main objectives of these procedures are the roentgenologic demonstration of narrowed or occluded coronary arteries and of anastomoses which may have developed between the right and left coronary artery systems.[10] The number and caliber of the anastomotic vessels cannot be evaluated in any other practical way.[10] While the angiogram may demonstrate narrowing or occlusion, the nature of the lesion and the amount of luminal cross-sectional area reduction must still be determined by dissection and histologic examination.

An additional specialized method of evaluation of the coronary anatomy is the technique of vinyl plastic casts.[26] Although these techniques yield fine specimens of the coronary artery tree, the luminal narrowing must still be assessed and the corrosion technique precludes proper pathologic study of the remaining portions of the heart.

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Clinico-Pathologic Conference

79-Year-Old Man with Shortness of Breath and Apical Lung Mass

Edited by
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**Grand Rounds—
Indiana University
School of Medicine**

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This is an edited transcript of the clinicopathologic conference conducted in February 1986 during a Grand Rounds session of the Dept. of Medicine, Indiana University School of Medicine. Discussants: Richard Kohler, M.D., Division of Infectious Diseases, Dept. of Medicine; Michael Glant, M.D., Dept. of Pathology; Marilyn Bartlett, Dept. of Microbiology; Vernon Vix, M.D., Dept. of Radiology.

A 79-YEAR-OLD WHITE MAN was admitted to the University Hospital with shortness of breath and an apical lung mass. The patient had been well until six weeks earlier at which time he noticed the onset of dyspnea on exertion and loss of appetite. With the onset of his pulmonary symptoms, the patient also began to produce thick brown sputum but denied fevers, chills, chest pain or hemoptysis. His appetite decreased and he lost approximately 20 pounds over the subsequent month. Three weeks before admission he was treated with a course of ampicillin and oral theophylline without any significant effect on his symptoms or sputum production.

A chest x-ray was obtained at that time and showed a left upper lobe density. A chest CT was performed and confirmed the presence of a mass in the apex of the left lung as well as mediastinal lymphadenopathy. He was referred to the University Hospital for further evaluation. Past medical history consisted of in situ carcinoma of the colon discovered in 1977 at which time he had a polypectomy. Follow-up colon studies had been normal since that time.

The patient had a remote history of polio at age 2 with resulting atrophy of the right leg. He had no known allergies. He was on no medication at the time of admission. Family history was unremarkable. The patient is a retired sporting goods salesman, with no recent travel history. He had no recent unusual exposures. The patient smoked two to three cigars a day for several years but stopped approximately 10 years ago. He only occasionally used alcohol.

Review of systems, other than what was mentioned above, was unremarkable. Physical examination on admission revealed a well developed white man who was breathing with pursed lips but otherwise appeared in no distress. His temperature was 36.5° orally, BP 120/70 without orthostasis, heart rate was 84 and regular, and his respiratory rate was 28. Skin showed no rashes and no lesions other than some seborrheic keratoses over the anterior chest. HEENT exam was unremarkable. Neck was supple and non tender. There were no palpable lymph nodes and the carotids were normal. Thyroid gland was felt to be normal.

Examination of the chest revealed the chest to be symmetric with good expansion. There was some use of accessory muscles for respiration. Breath sounds were vesicular throughout the chest. There were few scattered rhonchi heard. No rubs were heard and the diaphragmatic excursion was normal. Cardiac examination revealed a PMI that was normally placed. S1 was single, S2 was split with the pulmonic component of the second sound prominent. There was no S3 or S4.

The abdomen was obese. Liver and spleen were not palpable. There were no masses. There was a left inguinal hernia present. Neurological exam was normal and extremities showed no clubbing or cyanosis and only trace edema.

Laboratory exam showed the sodium to be 138, chloride 104, potassium 4.2, bicarbonate 25, BUN 16, creatinine 1.3, glucose 178. A repeat fasting glucose was 210. White count was 11,500 with 3 bands, 76 polys, 1 lymphs and 7 monocytes. Hemoglobi



FIGURE 1: PA and lateral chest x-rays showing a left upper lobe density with pleural thickening. Right paratracheal adenopathy also is present.

6, hematocrit 49.6, platelets 200,000, PT and PTT were 12.9 and 24.2, respectively.

The electrocardiogram showed a complete right bundle branch block, sinus rhythm and non-specific ST and T-wave changes. Arterial blood gas on room air showed a pO_2 of 44, PCO_2 of 24 and a pH of 7.50. Repeated on 4 liters oxygen by nasal cannula, the pO_2 was 54, PCO_2 29 and pH 7.49. Chest x-ray showed a left upper lobe mass with pleural thickening and aortopulmonary window nodes on the left (*Figure 1*). There was also right paratracheal adenopathy. A chest x-ray obtained six months before admission showed the right paratracheal adenopathy, but the lung fields were clear. Pulmonary function tests revealed an FEV1 of 2.33 liters, FVC of 2.81 liters, giving an FEV1/FVC ratio of .83. Total lung capacity was 4.56 liters, which is 62% of predicted. Functional residual capacity was 2.24 liters, which is 57% of predicted, and the diffusion capacity was markedly reduced at 31% of the predicted value. A fine needle aspiration of the left apical mass in the lung was performed. Cytologic examination of the specimen revealed no neoplastic cells but only inflammatory cells. Specimens were sent for culture for bacteria and AFB.

A ventilation perfusion scan was performed. Ventilation was decreased in the left lower lobe and left upper lobe. Trapping was seen in the washout phase of the left upper lobe and right middle lobe. The radionuclide venogram was read as showing no evidence of thrombophlebitis. Perfusion scanning showed perfusion defects in the left upper lobe and left lower lobe and multiple perfusion defects in the right lung field. The scan was interpreted as being of high probability for pulmonary embolus.

Intravenous heparin was begun. On the second hospital day pulmonary arteriography was performed; right ventricular pressure was 85/11 mm Hg. Contrast injection revealed total non-filling of the basilar branches of the left lower lobe and attenuation of the left upper lobe branches leading to the left upper lobe lung lesion. There was incomplete filling of the lingular branches. There was an intraluminal filling defect seen in the anterior segment of the right upper lobe felt to represent acute thrombus and there was a cut-off of numerous branches to the lower lobe on the right side.

The conclusions of the study were that right ventricular pressure was

elevated, and there was evidence of acute pulmonary emboli. The attenuation or tapering of the left upper lobe branches was consistent with chronic embolic disease but could also be consistent with pulmonary vasculitis. PPD placed at the time of admission was negative. An echocardiogram revealed right ventricular dilation, right atrial dilation and a pressure overload pattern of the right ventricle. Cultures of sputum and urine taken at the time of admission showed no growth. Contrast venography of the lower extremities showed changes consistent with chronic deep venous thrombosis in the right thigh and calf. There was a question of previous DVT on the left, based on the findings of prominent peroneal veins with small, partially nonvisualized anterior and posterior tibial veins. A result from the fine needle aspirate was returned from the laboratory.

Dr. Vix: This is the chest x-ray obtained on admission. There is infiltrate or mass in the left apex. There is pleural thickening across the top of it, with stranding toward the hilum and a fullness in aorto pulmonary window nodes. In addition, you have adenopathy on the right side. The old film seven months before this one showed the right side to be totally unchanged. All of the lesions seen on the left side were new since that time.

A CT of the chest done on the outside shortly before admission shows the density on the patient's left side and pleural thickening. Lung scans showed marked abnormalities. Virtually the entire left lower lobe and lingula are not perfused. At the same time, these areas have relatively normal ventilation. This was thought to be of high probability for pulmonary embolus. A pulmonary angiogram was done three days later. The area of the left lower lobe is abnormal. The vessels to the lingula do not fill. In the superior segment the vessels that go up to the area of infiltrate at the apex are corkscrewed and irregular, but there are no filling defects.

One positive finding for acute pulmonary embolus was seen in a vessel from the anterior segment of the right upper lobe, showing a filling defect within it, characteristic of clot. The deep veins in the left leg show changes of chronic thrombophlebitis with total occlusion of the superficial femoral vein and collateral vessels. The right leg showed areas of filling defect that may have been more acute clots.

Dr. Kohler's discussion of the case: I would like to subdivide this case to try to clarify a complicated situation. The radiologic and clinical evidence supports a diagnosis of chronic thrombophlebitis involving his right calf and thigh veins, probably secondary to the anatomic effects of polio. I think the importance of this is that it gives us a very plausible source for pulmonary emboli. Data from the pulmonary angiogram and pressure measurements support a diagnosis of pulmonary embolic disease that I think was recurrent, and that is probably why he had so much disease bilaterally.

Additional evidence for chronicity of the embolic disease comes from the pulmonary artery pressures. It is difficult for the right ventricle to generate a mean pulmonary artery pressure greater than 40 mm Hg acutely; otherwise, the patient goes into intractable shock and usually dies. His mean pulmonary artery pressure was about 36 mm Hg. Together with the radiograms and the history, I feel recurrent pulmonary emboli account for the pulmonary hypertension.

Chronic pulmonary hypertension due to embolic disease is estimated to occur in less than 4% of pulmonary emboli and is manifest by symptoms and signs of progressive right heart failure and hypoxemia. Greater than 60% occlusion of the pulmonary arterial bed is required to cause significant hemodynamic changes. I think it is reasonable to say that there was that much involvement in this patient.

What about other factors to consider in the differential diagnosis of his pulmonary complaints? He had in situ carcinoma of a colonic polyp treated by polypectomy in 1977. The cure rate of this procedure is very close to 100%. Furthermore, when a colon tumor metastasizes to the lungs it virtually always involves the liver first. He had no evidence of hepatic metastases.

He also had right paratracheal adenopathy and probably some left aortic pulmonary window adenopathy that was at least six months old. The differential diagnosis of hilar and mediastinal adenopathy is long and would not be overly helpful in trying to narrow the differential diagnosis. Adenovirus infections, blastomycosis, coccidiomyocosis, histoplasmosis, mononucleosis, measles, myocoplasma, psiticosis, tuberculosis, viral pneumonias, many tumors, Bechet's disease, systemic lupus, sarcoidosis and silicosis are all capable of causing paratracheal adenopathy. Fortunately, I know that the adenopathy was at least six months old, and furthermore, we know from following histo patients and TB patients that it can last many years. I am going to consider this an incidental finding.

Intercurrent medical illness may also be a factor in this case. He had an elevated fasting blood glucose; although I don't know with certainty if he was a diabetic, he was at least a chemical diabetic at this point. Diabetics are predisposed to certain infections. They are certainly predisposed to develop pulmonary tuberculosis. This has been proven by prospective epidemiological studies, and constitutes the reason for including diabetics in the high risk patients to receive isoniazid therapy for a positive PPD skin test even if older than 35 years of age.

Other pulmonary infections associated with diabetes include pulmonary mucormycosis and gram-negative pneumonias. There is a long list of pulmonary infections that are very weakly associated with diabetes, but these relationships are not well established.

The illness that is to be discussed in this man was a protracted illness characterized by anorexia, thick brown sputum, a left upper lobe mass with pleural involvement that was static or minimally changed over three weeks of observation, no fever, slight leukocytosis, a negative PPD and no response to ampicillin. Dyspnea can be easily explained by the chronic pulmonary emboli. His anorexia and weight loss could be associated with chronic right heart failure, tumors, or chronic infection. His thick brown sputum would make me worry more about infection as being the cause.

The mass itself will be the focus of my discussion that follows. The absence of fever is helpful since it narrows the range of infections that we have to worry about. I decided to narrow the differential diagnosis to three possibilities: (1) a bland pulmonary infarct; (2) an infected pulmonary infarct; (3) a low-grade or chronic pulmonary infection unrelated to a pulmonary infarct. Pulmonary infarcts virtually always involve areas adjacent to visceral pleura, and this man's certainly did. That is not particularly helpful in differential diagnosis because many infections also involve the visceral pleural space. The pleura over the infarct is virtually always inflamed and considerably thickened. During the first week or two following a pulmonary infarct considerable clearing of the lesion occurs, although complete clearing usually requires three to five weeks.

We have a three-week observation of this man's left upper lobe lesion, and during that period it did not change at all. For this reason, I think we are almost certainly dealing with something more than a bland pulmonary infarct. Pulmonary infarcts occasionally become infected and the organisms that can infect these infarcts include staph aureus and, less often, gram-negative bacilli. The predilection for these two groups of organisms to infect infarcts simply reflects the fact that usually these infections are acquired in the hospital. Although I think there is a reasonable possibility that this man had an infarct, it is highly unlikely that these two groups of organisms were involved in the infection. This type of infection usually causes rapid necrosis of tissue, forma tion of a cavity, and the patients are very ill.

Other organisms that can infect pulmonary infarcts are the saprophytic fungi. These include aspergillis species and the mucorales; of these two, the aspergillis species have accounted for most of the case reports of infected pulmonary infarcts. Aspergillis may grow in a cavitary infarct or create a cavitary lesion by growing in "solid infarct tissue" in which radiologically no cavity can be appreciated. Signs specifically attributable to infection tend to be minimal or totally absent. Most reported cases have been diagnosed either at surgery or autopsy. So I think we have here a set of circumstances that certainly could fit the case at hand.

There is a possibility that an infectious process was occurring unrelated to pulmonary infarction. If this is true, the infectious agent would be of a type that progresses slowly and produces minimal clinical evidence of infection. These include TB, histoplasmosis, blastomycosis, coccidiomycosis, nocardia, actinomycosis, aspergillosis, and mucormycosis. TB, histo, blasto, and crypto all produce mass-like pulmonary infiltrates of various sizes. They all can produce disease with minimal signs of infection, although TB does tend to produce more systemic signs of illness. They all can infect an immunocompetent host, and from what we are told our patient appears to be immunocompetent. Our patient's diagnosis was established by needle aspiration, and all these diseases can be established in that way.

All these agents are clear considerations in this case. Coccidiomycosis can cause lesions like this, but our patient has no history of travel to the southwest, so I won't consider that any longer. Nocardiosis is a possibility. The inflitrates may be nodular or cavitary. The systemic signs and symptoms of infection with nocardia vary from none to fever, chills, and productive cough. Although the diagnosis can sometimes be made from a sputum exam, more often some invasive procedures are required. Nocardia would appear either in a sputum gram stain or an aspirate as a beaded, branching gram-negative organism. Modified acid fast stain of nocardia organisms show them as branching acid fast organisms. A standard acid fast stain will completely wash the red color out of nocardia.

Actinomycetes can also produce a disease that involves the lungs, pleura, mediastinum, or chest wall that tends to progress slowly producing signs and symptoms resembling malignancy or TB. Often it is not recognized until empyema, chest wall fistula, or hematogenous dissemination occurs. Actinomycetes can be diagnosed by aspiration, and they too produce an appearance of gram-positive branching organisms on stain. Unlike nocardia, however, these organisms are not acid fast.

Pulmonary mucormycosis is another infection that we need to consider. The infection is caused by an organism belonging to the order mucorales. These are bread and fruit molds and soil saprophytes. Most patients infected with these organisms are either immunosuppressed or diabetic. The immunosuppressed patients are usually granulocytopenic. The diabetics who present with mucormycosis are usually markedly hyperglycemic. They are usually acidotic, either at the time the diagnosis is made or they have been acidotic in the recent past. There are case reports, however, of well controlled diabetics with this infection. The course tends to be aggressive and fulminant, although it may also be chronic and indolent, particularly in diabetics. This organism can invade blood vessels and can actually cause pulmonary infarcts. I don't think this patient's pulmonary thrombotic

disease was related to this organism since the infarcts caused by mucor tend not to be bilateral, but restricted to a single area involved in the infection. As I have already mentioned, this organism can invade and infect bland infarcts. The organism is diagnosed by obtaining tissue and seeing branching fungal forms that do not contain septae.

Aspergillis may also invade pulmonary tissues. It occurs mainly in people who are granulocytopenic or immunosuppressed. There are cases in patients with chronic lung or liver disease and no known predisposing factor. And, as I have already mentioned, pulmonary infarction is a known predisposing factor to aspergillis infection of the lungs. Sputum production is unusual. Usually in pulmonary aspergillosis the radiographic pattern is multiple, focal, peripheral infiltrates, although they may be unifocal or diffuse. Blood cultures are rarely positive. Sputum cultures are positive in a minority of patients. Aspergillis, like mucor, can also cause pulmonary infarcts, by invading pulmonary blood vessels. Aspergillis virtually always requires an aspirate or a piece of tissue for diagnosis.

I have now given you pieces of information that I have considered trying to put this case together. The lung lesion could be caused by a variety of pathogens including M. tuberculosis, a branching bacteria such as nocardia, actinomycetes or a saprophytic fungi. I think all have to be considered in the differential diagnosis, and I would not have been willing if I were caring for this patient to pick one pathogen from that group and base my treatment on it. I think it was essential that a diagnostic procedure be performed.

I will, however, consider the patient's associated illnesses in attempting to select among the possibilities. I could focus on his diabetes and lean toward tuberculosis or mucormycosis. However, diabetes is a common condition and most diabetics develop neither tuberculosis nor mucormycosis. I would expect him to appear more systemically ill from TB, and he did have a negative PPD, so I am going to reject TB as my top choice. Primary mucormycosis is rare, even in diabetics, and even more rare in the absence of ketoacidosis, so I will not make diabetes related mucormycosis my top choice either.

I prefer to focus on the patient's pulmonary embolic disease. Since the presumed infection of our patient is apparently low grade and devoid of systemic symptoms, I am left with the saprophytic fungi which can infect infarcted lung tissue. I can choose between mucor and aspergillis; either would be possible. However, literature reports of aspergillis infections in this context outnumber those of mucor, so my final diagnosis is probable aspergillis infection of infarcted lung tissue.

Dr. Glant: A fine needle aspirate of the lung lesion was performed. What we were looking for in this patient was more accurate identification of infectious organisms. Primarily, we use this procedure for diagnosis of tumors. This patient had no contraindication to fine needle aspiration. We have seen a variety of complications, although the only really significant one is pneumothorax, occurring in about 30% to 40% of patients. Usually it is so minor that they do not require a chest tube. About 5% require an overnight chest tube following this procedure. Severity of pneumothorax relates primarily to the size of the needle employed, and the number of passes of the needle across the pleura. This test is relatively inexpensive, and provides diagnostic information about 95% of the time.

Literature reports of sensitivity and specificity need to be interpreted in the light of the experience of the reporting center. We really run on the high side for the specificity and sensitivity figures. The reason we do is because we have employed multiple sampling techniques, both in superficial and deep lung lesions. This has allowed us to actually define the predictive value in negative lung and superficial aspirates.

The aspiration is done using a double needle approach. A guide needle is passed across the pleural interface once so it does not increase the incidence of pneumothorax with multiple needle passes. This needle is placed within one centimeter of the radiologic density and then a 23 or 24 gauge needle may be passed multiple times. We can easily take 20 to 40 samples within an hour in working with the patient. Generally, after 10 passes we have a diagnosis.

In the radiology suite we set up rapid stains of preparations as well as stains that are done later, and rinses of the needle for electronmicoscopy or cultures. In using sterilized slides, we can assure ourselves that no contamination from the slides has occurred and allow the radiologist to use the needles over and over during the procedure. Paired sets of smears are prepared, one that is wet fixed, the other air dried. The air dried slide is rapidly stained in about two to three minutes and reviewed to give the radiologist feedback as to the quality of the sampling. The radiologist repeats sampling if needed. In this patient the samples were quite poor initially. Only by number 18 or so did we start to see lots of inflammatory cells. On the permanent Papanicolaou stains in the same aspirate, there were organisms covered with inflammatory cells.

As we are experts in neoplasia but not expert in organisms, we immediately run across to Marilyn Bartlett and the other people in microbiology and ask them what they think. We thought this looked like a mucor species, however. We also try to take samples in culture tubes for the microbiologist.

Marilyn Bartlett: We found nonseptate hyphae characteristic of the mucorales or Phycomycetes in the specimen from one aspirate (*Figure 2*). Normally, the specimens we receive to examine for infectious agents are those from biopsy or, as in this case, a needle

aspiration. If the specimen is from a bronchoscopic procedure or an open lung biopsy, there is usually adequate specimen to prepare both cultures and slides for microscopic examination from the same specimen, so the results of culture and the demonstration of organisms in the stain correlate.

As Dr. Glant explained, in fine needle aspiration there are multiple samples taken and, therefore, what we find in one slide may not be the same sample that was cultured. It is not unusual for the results from cultures and slide examination not to correlate. If there is material from a transbronchial biopsy or an open lung biopsy then, of course, in addition to doing the slides and cultures, we do have both permanent sections and frozen sections.

In handling the specimen, we usually use a variety of stains and a variety of cultures to find anything that might possibly be there. The stains that we use are Gram-Weigert, which is a screening stain, Giemsa, which is a stain that shows the internal structures and also the cell population, and a rapid silver stain. We can find bacteria, fungus, Legionella, nocardia, or mycobacteria with these stains. Appropriate cultures are prepared for all these organisms. In addition, if mycoplasma or chlamydia is suspected, appropriate cultures for those organisms are prepared.

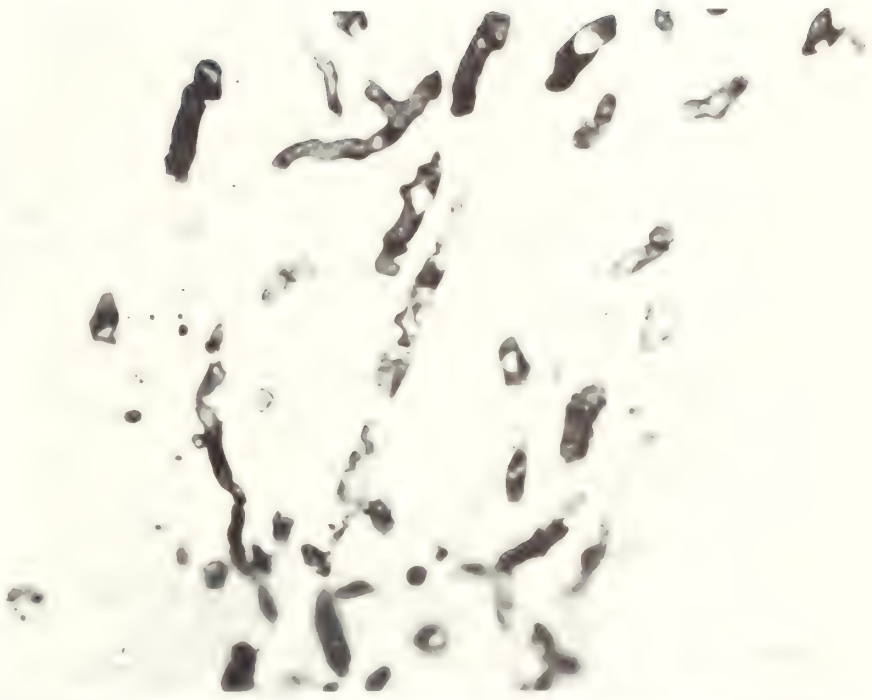


FIGURE 2: Non-septate hyphae of the mucorales in a specimen taken at the time of needle biopsy.

In this instance, we went through a lot of slides. As Dr. Glant said, we looked at 20 or 25 slides field by field with all of these stains. In the Gram-Weigert stain, we observed a fungus and at higher power it appears broad is not septate. We used Giemsa stain as a confirmatory stain, in this instance, and we could again demonstrate there are no septae. This fungus is of the genus mucorales; the pathologic diagnosis is pulmonary mucormycosis.

Dr. Kovacs: This man received a course of antifungal therapy, was anticoagulated, and has done quite well, resolving the infiltrate on subsequent chest x-ray. He is currently alive and doing well.

Strategies to Reduce Malpractice Claims

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A PHYSICIAN WHO practices excellent medicine and keeps a congenial rapport with patients is unlikely to be involved in malpractice litigation. Believe this statement and you will date yourself at least five years. Bad results and poor communication cause malpractice suits. Poor communication can be eliminated, but bad results are an inexorable part of the art of medicine. A bad result is seen by some patients as a potential key to a vault containing instant wealth. Hopefully, by following these suggestions, you will make the vault hard to open.

1. **Maintain accurate and complete records.** The truth is this: the medical record can be your worst enemy or your best defense. A legible record of the patient's history, physical examination, significant changes in condition, treatment rendered and follow-up directions are essential. Lawsuits are settled daily because the physician believes he provided adequate care, but he can't prove it by the record.

2. **Keep expectations realistic.** Physicians need to continually remind themselves and their patients that they are all subject to the unpredictable whims of nature and disease. No person can cure all ills. Giving the impression that you can means trouble down the road when the patient's condition deteriorates. It takes a delicate touch to infuse hope and still keep patients aware of the uncertainty of the medical outcome. It is much better to foster a healthy pessimism in difficult cases. If a miraculous improvement occurs, give credit where credit is due. A physician, unless in the possession of preternatural healing power, is wise not to take the credit for miracles unless he or she also wishes to take the blame for failures.

3. **Get the patient's consent.** Let the patient make the decision to proceed with the treatment. The physician has a duty to get the "informed" consent of the patient. This means the treatment must be explained in terms the patient can understand. When giving consent the patient must understand the nature of the procedure, its benefits, its risks and alternative treatments available. Let the patient accept responsibility for this decision—then if a complication does occur the patient is more likely to accept some of the responsibility.

4. **Keep the patient/family informed.** Serious medical situations are part of your life but the patient is going through his own unique personal crisis. The shock of a dreadful illness or serious injury is enough to deal with without struggling to understand the medical jargon. You cannot impart years of medical training when responding to the questions of a perplexed spouse but you should attempt to give a pertinent response in terms that can be understood by the layman. Keep families posted about serious changes in condition. Explain that all hospitals are breeding grounds for infection in a patient with low resistance. There is nothing wrong with telling a family that medical science is not exact and that infections and complications are part of the expected course.

5. **Be open when asked about cost.** Although the modern patient is trying to be an informed consumer, he is confused about PPOs, HMOs, HCI, etc. When a patient comes to your office to discuss a planned surgery you'd best be prepared to discuss payment options. The family of the patient who is in an emergency situation doesn't care about this until the crisis has passed. Be swift to arrange for an adjustment of any bill which has been increased through real mistakes. Neither you nor the hospital wants a patient to be reminded of an error that occurred every time he looks at the bill. Work with the hospital's risk manager to mitigate the financial consequences of any mishap.

6. **Respect your patient's time.** The vast majority of people who visit their physician do not look forward to it. Waiting in a reception area or half dressed in an examining room for an hour builds anxiety and anger. Because most of the time this is unavoidable, many practitioners build in time for walk-ins and emergencies. But even with this schedules are easily put way off course. An explanation is always in order if you are late. No matter how good your medical and surgical skills, the patient will not be agreeable after a long wait unless an apology is offered. Be humble and considerate. You are liable to be giving a lot of free time to an attorney if you do not consider your patient's time as valuable as your own.

7. **Do not criticize the hospital staff in front of your patient.** The hospital and the physician are on the same side—that which promotes the best patient care. A physician who publicly lambasts staff not only undermines the confidence of the patient who witnesses the incident but also encourages

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disgruntled employees to subtly degrade his reputation. Don't promote conflict between yourself and the hospital staff. If something goes wrong assure the patient it will be looked into, and communicate immediately with the supervising nurse on duty. Putting the word "incident report" in a chart may seem like the thing to do at the time, but resist the urge. These reports cannot be brought into court because they are "peer review" documents. Do not add fuel to the lawyer's fire by referring to them in the medical record. As mentioned above, you are liable to find yourself roasting on the spit along with the hospital. Always chart what happened to the patient ("found on floor"—if you know so first hand), the patient's condition and treatment provided. Incident reports should list all witnesses to the event, physical conditions of the patient's surroundings ("bed rails down") and any staff problem ("patient stated nurses ignored call lights").

8. **Purchase malpractice insurance.** There is every reason to buy insurance in Indiana. The provisions of the Indiana Medical Malpractice Act have resulted in some of the lowest premiums in the country.* Qualified individual health care providers face maximum exposure of $100,000 per claim. To qualify, you pay 100% of your insurance premium to the Indiana Patient's Compensation Fund. Even if you have had bad experience you are guaranteed coverage through the Indiana Residuary Fund (you may apply if you have had three declinations from insurance companies). Another positive feature in Indiana is that you are able to purchase "occurrence coverage." This means your insurance will cover any claim that occurs during the policy period. This is preferable to "claims made" which only covers claims filed during the period, so that you will have to carry "tail" coverage if you decide to drop the policy to pick up any claims that may still arise.

9. **Do not criticize other physicians.** Most of us see the ethical and professional motivation to refrain from passing judgment on the previous mismanagement of a case. Physicians do not usually remember that they have a very personal reason to discourage patients from suing their other physicians. In complicated cases, many aspects of the diagnosis and treatment are controversial. When the case is reviewed for possible legal action, the attorney or expert may well suggest that your treatment was also at fault and you may find yourself named in the suit. At best, you will spend money, time and effort to get your name removed from the case. At worst, you may find yourself forced to testify against a local colleague just to defend yourself. Keeping your patients out of court is a good way to keep yourself out of court.

10. **Do not take cases outside your specialty.** All physicians occasionally have the opportunity to handle a "small" problem that is outside of their own area of expertise. An internist may want to suture a neighbor's laceration, or a surgeon may renew a prescription for digoxin. As physicians you are capable of doing small things like this outside of your normal practice area. However, you may lack both the judgment and experience to prevent complications in these areas or to defend yourselves against them when they occur. When the healed scar is unsightly or the patient develops digoxin toxicity, both physicians in these examples will find themselves on the far end of a very thin plank. A physician should limit practice to cases where he or she has training, experience, and judgment, and should refer other cases to qualified colleagues.

11. **If something goes wrong . . .** First of all get the facts. Don't hesitate to get an outside consultant. If you are at fault for a real catastrophe (medication error, operative mishaps, etc.), you will be so emotionally involved in the case that it will be difficult for you to keep things in perspective. In less serious cases, you may know exactly what happened and be able to manage the case well. However, a supporting second opinion will renew the confidence of your patient. Always be open and honest with the patient. Notify nursing staff, house staff physicians and consultants that you will personally handle communications with the patient and family. This minimizes their exposure to a multitude of opinions which may or may not be the same as yours. If you're going to do this you must be available to answer their questions—either in person or by telephone. Notify the hospital's risk manager because most likely the hospital will be a co-defendant if you are sued. Our experience is that the hospital looks out for the physicians on their staff so that you can expect their full cooperation. Finally, if you are sued don't close up shop and go into the doldrums. Litigation, unfortunately, is a cost of doing business. It is heart rending to be sued by a patient after you've saved his life, but it is a disservice to yourself, your family, your fellow practitioners and patients to let one bad experience color your attitude.

Conclusion

Recent publicity has underlined the fact that juries are unpredictable and that it is possible for them to award a large judgment against a physician who provides what appears to be excellent medical care. All the more reason to stay out of court. Most legal judgments in Indiana malpractice cases are in favor of the physician, but the physician loses every case—time, income, energy, and self esteem all lost by the physician every time a malpractice action is filed. Limit your losses by following these suggestions.

*Current examples of premium cost/ranges. (Occurrence basis, includes payment to Patient's Compensation Fund.)
Class I—General Practitioner ..... $ 1,248-$ 1,646
Class VIII—OB/GYN $11,592-$13,992

Medicine's Lighter Moments

TED L. GRISELL, M.D.
Indianapolis



THE GOVERNOR

'Ted, You Should Remember Me Better Than That'

ONE OF INDIANA's most respected Governors of the last few years has been Dr. Otis Bowen of Breman, Ind. He held the office eight years and, of course, is now the Secretary of Health and Human Services.

During the campaign in which Dr. Bowen was first running for the Governor's office, he addressed a combined meeting of the Johnson and Marion County Medical Societies at a dinner-reception at the Eldorado Country Club. He outlined some of his prerogatives for running for the governorship and gave a pep talk in support of his party's other candidates who were on the docket for election.

During the reception afterwards, Dr. Bowen met several of the doctors and their friends who were present at the dinner. I approached him and offered my congratulations.

I told Dr. Bowen it was certainly interesting that a physician should take enough time from his busy medical schedule to become interested enough in politics to become a State Representative, then a State Senator—and soon, hopefully, Governor. I offered to personally help his candidacy by speaking in his behalf or providing modest monetary support.

At the conclusion of this little diatribe on my part, I mentioned it was a pleasure to make his acquaintance.

But Dr. Bowen said, "Ted, you should remember me better than that." Taken aback, I asked, "Why is that?"

Dr. Bowen explained. "When I was an intern a number of years ago at the Methodist Hospital in Indianapolis, I missed a diagnosis of a ruptured ectopic pregnancy in the emergency room. You chewed me out so well that I have never missed one since!"

With that, he gave a big grin and a big hug—and obviously won my undying support. We have remained good friends ever since, even to the extent of my having taught in the family practice division of the Indiana University School of Medicine at his request in the years after he was Governor.

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***See Warnings and Precautions.**

Please see brief summary of prescribing information on the next page.



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FEW SIDE EFFECTS IN ANTIANGINAL THERAPY

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Brief Summary
Professional Use Information

CARDIZEM®
(diltiazem HCl) 30 mg and 60 mg Tablets

CONTRAINDICATIONS

CARDIZEM is contraindicated in (1) patients with sick sinus syndrome except in the presence of a functioning ventricular pacemaker, (2) patients with second- or third-degree AV block except in the presence of a functioning ventricular pacemaker, and (3) patients with hypotension (less than 90 mm Hg systolic).

WARNINGS

1. ***Cardiac Conduction.*** *CARDIZEM prolongs AV node refractory periods without significantly prolonging sinus node recovery time, except in patients with sick sinus syndrome. This effect may rarely result in abnormally slow heart rates (particularly in patients with sick sinus syndrome) or second- or third-degree AV block (six of 1,243 patients for 0.48%). Concomitant use of diltiazem with beta-blockers or digitalis may result in additive effects on cardiac conduction. A patient with Prinzmetal's angina developed periods of asystole (2 to 5 seconds) after a single dose of 60 mg of diltiazem.*
2. ***Congestive Heart Failure.*** *Although diltiazem has a negative inotropic effect in isolated animal tissue preparations, hemodynamic studies in humans with normal ventricular function have not shown a reduction in cardiac index nor consistent negative effects on contractility (dp/dt).*
   Experience with the use of CARDIZEM alone or in combination with beta-blockers in patients with impaired ventricular function is very limited. Caution should be exercised when using the drug in such patients.
3. ***Hypotension.*** *Decreases in blood pressure associated with CARDIZEM therapy may occasionally result in symptomatic hypotension.*
4. ***Acute Hepatic Injury.*** *In rare instances, significant elevations in enzymes such as alkaline phosphatase, CPK, LDH, SGOT, SGPT, and other symptoms consistent with acute hepatic injury have been noted. These reactions have been reversible upon discontinuation of drug therapy. The relationship to CARDIZEM is uncertain in most cases, but probable in some. (See PRECAUTIONS.)*

PRECAUTIONS

General. *CARDIZEM (diltiazem hydrochloride) is extensively metabolized by the liver and excreted by the kidneys and in bile. As with any new drug given over prolonged periods, laboratory parameters should be monitored at regular intervals. The drug should be used with caution in patients with impaired renal or hepatic function. In subacute and chronic dog and rat studies designed to produce toxicity, high doses of diltiazem were associated with hepatic damage. In special subacute hepatic studies, oral doses of 125 mg/kg and higher in rats were associated with histological changes in the liver which were reversible when the drug was discontinued. In dogs, doses of 20 mg/kg were also associated with hepatic changes, however, these changes were reversible with continued dosing.*

Drug Interaction. *Pharmacologic studies indicate that there may be additive effects in prolonging AV conduction when using beta-blockers or digitalis concomitantly with CARDIZEM. (See WARNINGS.)*

Controlled and uncontrolled domestic studies suggest that concomitant use of CARDIZEM and beta-blockers or digitalis is usually well tolerated. Available data are not sufficient, however, to predict the effects of concomitant treatment, particularly in patients with left ventricular dysfunction or cardiac conduction abnormalities. In healthy volunteers, diltiazem has been shown to increase serum digoxin levels up to 20%.

Carcinogenesis, Mutagenesis, Impairment of Fertility. *A 24-month study in rats and a 21-month study in mice showed no evidence of carcinogenicity. There was also no mutagenic response in in vitro bacterial tests. No intrinsic effect on fertility was observed in rats.*

Pregnancy. *Category C. Reproduction studies have been conducted in mice, rats, and rabbits. Administration of doses ranging from five to ten times greater (on a mg/kg basis) than the daily recommended therapeutic dose has resulted in embryo and fetal lethality. These doses, in some studies, have been reported to cause skeletal abnormalities. In the perinatal/postnatal studies, there was some reduction in early individual pup weights and survival rates. There was an increased incidence of stillbirths at doses of 20 times the human dose or greater.*

There are no well-controlled studies in pregnant women; therefore, use CARDIZEM in pregnant women only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers. *Diltiazem is excreted in human milk. One report suggests that concentrations in breast milk may approximate serum levels. If use of CARDIZEM is deemed essential, an alternative method of infant feeding should be instituted.*

Pediatric Use. *Safety and effectiveness in children have not been established.*

ADVERSE REACTIONS

Serious adverse reactions have been rare in studies carried out to date, but it should be recognized that patients with impaired ventricular function and cardiac conduction abnormalities have usually been excluded.

In domestic placebo-controlled trials, the incidence of adverse reactions reported during CARDIZEM therapy was not greater than that reported during placebo therapy.

The following represent occurrences observed in clinical studies which can be at least reasonably associated with the pharmacology of calcium influx inhibition. In many cases, the relationship to CARDIZEM has not been established. The most common occurrences as well as their frequency of presentation are: edema (2.4%), headache (2.1%), nausea (1.9%), dizziness (1.5%), rash (1.3%), asthenia (1.2%). In addition, the following events were reported infrequently (less than 1%):

Cardiovascular	*Angina, arrhythmia, AV block (first degree), AV block (second or third degree — see conduction warning), bradycardia, congestive heart failure, flushing, hypotension, palpitations, syncope*
Nervous System	*Amnesia, gait abnormality, hallucinations, insomnia, nervousness, paresthesia, personality change, somnolence, tinnitus, tremor*
Gastrointestinal	*Anorexia, constipation, diarrhea, dysgeusia, dyspepsia, mild elevations of alkaline phosphatase, SGOT, SGPT, and LDH (see hepatic warnings), vomiting, weight increase*
Dermatologic	*Petechiae, pruritus, photosensitivity, urticaria*
Other	*Amblyopia, dyspnea, epistaxis, eye irritation, hyperglycemia, nasal congestion, nocturia, osteoarticular pain, polyuria, sexual difficulties*

The following postmarketing events have been reported infrequently in patients receiving CARDIZEM: alopecia, gingival hyperplasia, erythema multiforme, and leukopenia. However, a definitive cause and effect between these events and CARDIZEM therapy is yet to be established.

Issued 7/8

See complete Professional Use Information before prescribing.

References: ***1.*** *Pepine CJ, Feldman RL, Hill JA, et al: Clinical outcome after treatment of rest angina with calcium blockers: Comparative experience during the initial year of therapy with diltiazem, nifedipine, and verapamil. Am Heart J 1983, 106(6):1341-1347.* ***2.*** *Shapiro W: Calcium channel blockers: Actions on the heart and uses in ischemic heart disease. Consultant 1984,24(Dec):150-159.* ***3.*** *Johnston DL, Lesoway R, Humen DP, et al: Clinical and hemodynamic evaluation propranolol in combination with verapamil, nifedipine and diltiazem in exertional angina pectoris: A placebo-controlled, double-blind, randomized, crossover study. Am J Cardiol 1985,55:680-687.* ***4.*** *Cohn PF, Braunwald E: Chronic ischemic heart disease, in Braunwald E (ed), Heart Disease: A Textbook of Cardiovascular Medicine, ed 2. Philadelphia, WB Saunders Co, 1984, chap 39.* ***5.*** *Schroeder JS: Calcium and beta blockers in ischemic heart disease. When to use which. Mod Med 1982,50(Sept):94-116.*

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CME QUIZ

TO OBTAIN ONE HOUR OF CATEGORY 1 AMA CME CREDIT, answer the following questions by circling the correct answer on the answer sheet below. Complete and clip the application form and mail it to: Indiana University School of Medicine, CME Division, BR 156, 1226 W. Michigan St., Indianapolis 46223.

Carcinoma of the Prostate

CONTINUED FROM PAGES 1039-1043

1. In incidence of cancer in males, carcinoma of the prostate ranks:
   a. 1st
   b. 2nd
   c. 3rd
   d. 4th
2. The highest incidence of prostate cancer is noted in:
   a. Japanese males living in Japan
   b. Japanese males living in the United States
   c. Black males living in the United States
   d. Caucasian males living in the United States.
3. At diagnosis, what percentage of patients will be found to have unresectable (stage C or D) carcinoma of the prostate?
   a. 10-20%
   b. 30-40%
   c. 50-60%
   d. 70-80%
4. In the work-up of prostatic carcinoma, approximately 50% of patients may be upstaged following which two procedures:
   a. Biopsy and node dissection
   b. Chest x-ray and bone scan
   c. Bone scan and node dissection
   d. Bone scan and chest x-ray
5. In what order is the relative risk of spread of prostatic carcinoma correctly listed from most likely to least likely?
   a. Lymph nodes, skeleton, lungs, liver
   b. Lymph nodes, liver, lungs, skeleton
   c. Lungs, skeleton, lymph nodes, liver
   d. Skeleton, liver, lymph nodes, lungs
6. Correlation between pelvic lymphadenectomy and Gleason grading of the prostate demonstrate an approximately ____ risk for Gleason sums of 8 through 10 and approximately ____ risk for sums 2 through 4. Choose the answer which best fills the respective blanks.
   a. 90% and 10%
   b. 10% and 90%
   c. 60% and 40%
   d. 40% and 60%
7. A modification of the radical retropubic prostatectomy that preserves sexual function was developed recently by:
   a. Paulson
   b. Myers
   c. Walsh
   d. Elder
8. In the Mayo Clinic experience of radical prostatectomy for carcinoma of the prostate, the 10-year survival of patients with stage B1 and B2 disease was 85% and 75%, respectively. What was the 10-year survival of patients with stage C disease?
   a. 70%
   b. 50%
   c. 30%
   d. 10%
9. Although no direct survival comparison between radical prostatectomy and irradiation has been adequately conducted in a prospective fashion, the Stanford experience with irradiation has been_____ the surgical literature.
   a. Essentially similar to
   b. Clearly superior to
   c. Clearly inferior to
   d. Somewhat inferior to
10. The risk of development of genital or leg edema following whole pelvic irradiation is influenced how by the prior addition of radical lymph node dissection?
    a. Unaffected
    b. Only slightly increased
    c. Markedly increased
    d. Moderately decreased

NOVEMBER CME QUIZ Answers

Following are the answers to the CME quiz that appeared in the November 1986 issue: "Meniere's Disease," by Richard T. Miyamoto, M.D.

1. a	6. c
2. d	7. b
3. b	8. c
4. d	9. b,c,d
5. d	10. d

Answer sheet of Quiz: (Carinoma of the Prostate)

1. a b c d	6. a b c d
2. a b c d	7. a b c d
3. a b c d	8. a b c d
4. a b c d	9. a b c d
5. a b c d	10. a b c d

I wish to apply for one hour of category 1 AMA Continuing Medical Education credit through the I.U. School of Medicine. I have read the article and answered the quiz on the answer sheet above. I understand that my answer sheet will be graded confidentially, at no cost to me, and that notification of my successful completion of the quiz (80% of the questions answered correctly) will be directed to me for my application for the Physician's Recognition Award of the American Medical Association. I also understand that if I do not answer 80% of the questions correctly, I will not be advised of my score but the answers will be published in the next issue of INDIANA MEDICINE.

Name (please print or type)

Address

Identification number (found above your name on mailing label)

Signature

To be eligible for this month's quiz, send your completed, signed application before Jan. 10, 1987 to the address appearing at the top of this page.

EDITORIALS

Sports Drinks vs. Water: Which Is Better?

Fluid intake during exercise, both during heavy work and sports exercise, has been subject to many myths and old-wives tales for many years. The oldest and most dangerous of these oldies was the dictum that partaking of any liquid refreshment during or immediately after exercise was hazardous and in many jurisdictions was strictly forbidden.

Fortunately, this falsity has been abandoned due to experience with bad results. It, however, was at one time replaced by the custom of allowing water and nothing else as a thirst quencher.

Modern times have been devoted, happily, to the physiological fact that exercise, especially in hot weather, is accompanied by loss of electrolytes as well as water. Modern times have also demonstrated that exercise and any type of muscular exertion consumes glucose as a source of energy and, if exercise is prolonged, reserves of carbohydrate energy sources tend to become depleted.

As all these physiological facts became evident, more myths and old-wives tales developed and thrived. Some of the myths were as follows: "plain water empties from the stomach the fastest"—"plain water is absorbed faster"—"sport drinks containing electrolytes and glucose slow gastric emptying"—"beverages with more than 2.5% carbohydrate should be avoided or diluted"—"sport drinks contain a lot of salt"—"sport drinks contain a lot of sugar"—"sport drinks contribute to dehydration", etc., etc.

During the recent Sports Medicine national conference in Indianapolis, a scientifically conducted and carefully monitored research project was reported. The University of South Carolina's Exercise Physiology Laboratory found that some sport drinks can significantly enhance athletic performance and are absorbed into the bloodstream as fast as water.

Nineteen subjects experienced in endurance cycling were tested on stationary bikes. Three types of fluid, 6% sugar and small amounts of sodium and potassium, 2.5% sugar with small amounts of electrolytes, and plain water, were tested in a well controlled exercise.

Absorption into the bloodstream was measured by adding deuterium oxide to the drinks and measuring the circulating D_2O by blood samples.

The rate at which D_2O accumulated in plasma was similar for all three drinks. The 6% carbohydrate/electrolyte beverage maintained a higher respiratory exchange and a higher blood glucose. Exercise performance—as gauged by the time it took to complete 2,700 pedal revolutions—was significantly better in the trial using the 6% carbohydrate beverage.

A list of references authenticating the new modern "sports drink philosophy" will be mailed by INDIANA MEDICINE to those who request it.



"Well, since you asked. No, I haven't personally made a fortune from any of these plans."

Reader Praises Pastor's Recent Article on Doctor-Patient Relationships

Letter To The Editor

The article in the September issue of INDIANA MEDICINE, "Doctor-Patient Relationships: A Pastor's Perspective" by Dr. Enright and Dick Powell, is excellent.

I brought it to the attention of Dr. Don MacMillan, Director of Research at Eisenhower Medical Center. He was favorably impressed and has had copies distributed to all members of our Research and Institutional Review Board Committees.

INDIANA MEDICINE is an excellent journal and I look forward to reading it each month.

I am involved on several committees, i.e., education, IRB and bioethics at Eisenhower. I also participate in the research program as a volunteer. Eisenhower is an unusual institution. The Betty Ford Center for Treatment of Drug Abuse has gained national recognition. We have some excellent surgeons and internists on the staff. I enjoy my association. It keeps me in touch.

Medical facilities certainly are expanding in Indianapolis. The new addition to Methodist is huge and the new Riley is magnificent.

My health is good. With best wishes to all.

Sincerely, **(signed) Ken Kohlstaedt (Kenneth G. Kohlstaedt, M.D., Palm Springs, Calif., formerly of Indianapolis)**

Physician Advisor Explains Role in Peer Review

Letter to the Editor

I have been asked to write an explanation of why I am a Physician Advisor. A Physician Advisor, you understand, is a term selected by Peerview to designate a practicing physician who does chart review on selected Medicare and Medicaid cases. The Physician Advisor is an integral part of the review process which companies, such as Peerview, contract to do for H.C.F.A. I'm confident the overwhelming percentage of doctors is well acquainted with this process.

I've been a Physician Advisor for nearly two years. Before I started I was privy to all the vitriolic comments heard almost daily in the doctor lounges all across the country concerning the damnable encroachment on medical practice by the bureaucratic rascals in Washington. I believed mos

of the comments then and I think I still do.

At my hospital staff meeting in November 1984 an announcement was made asking for any volunteers to do some chart review for the Indiana Medical Review Organization at Terre Haute. I suppose my curiosity was the great motivation - at any rate, I phoned and arranged to do chart review on a Wednesday - my day off. I've been doing it ever since.

My reasoning is basic. I practice medicine - Family Practice. I began in 1952 and grew up medically in a very strong private practice idiology. I have never liked government intrusion into private practice and I don't like it now - including the review process of which I'm part. I continue to do review because I learned long ago that if the medical profession doesn't act, the bureaucrats will. If physicians don't act in this review business, non-physicians will.

I have been most favorably impressed by the overall philosophy at Peerview. It is a physician dominated firm and the physicians involved are basically no different from the physicians whose charts they review. They are all experienced doctors whose review usually reflects the "there but by the Grace of God" feeling every doctor knows. The mandate for review is a matter of law today. Whether we like it or dislike it is of no importance; but, whether we private practice physicians do it is of the greatest importance to the medical profession.

My greatest motivation to continue as a Physician Advisor has been and remains my strong belief that medical matters - medical work - are best evaluated by doctors - Peerview. Physician Advisors are compensated quite adequately and Physician Advisors are involved in an on-going learning process that is unique to reviewing medical charts. The "pearls" one can pick up reviewing charts is truly rewarding.

Perhaps the next time the conversation in the lounge deals with "what those rascals denied" or some such judgmental opinion of this review process you'll reflect a lot. I'm saying actually, "try it - you may like it" - I can assure you a pleasant surprise.

Sincerely, **George S. Allen, M.D., Georgetown, Indiana**

The Real Beneficiaries of Alphabet Soup Medicine

Guest Editorial

As doctors become more deeply immersed in the Alphabet Soup of HMO's, PPO's, IRA's, DRG's etc, we become more and more aware of the changes in medical practice. We realize that few of these changes are directed toward improved patient care.

As I see it, the changes are not directed to the advantage of patients. But rather to the welfare of politicians and third-party insurers.

Most doctors are uncomfortable due to the confusion caused by all the above, and we very well should be. I know of no doctors who were trained to be watch-dogs of the purse strings of insurance companies; nor who were trained to mis-direct clinical judgment to the detriment of patients.

Isn't that what Alphabet Soup is all about? That is not patient welfare.

I wonder, who are these alleged nurses on the other end of the phone from whom we must try to badger permission to hospitalize a patient? What wise godesses they must be to permit two or three days of care for a patient they have not seen, when we who have seen the patient don't know how many days of care will be needed. This is not good medical care.

The politicians and bureaucrats are also so well trained and knowledgeable in medical matters that they can "wisely" decree how much money can be paid for the cure of a patient via the Medicare allowances and the DRG's.

In the background, circling the unfortunate patients and doctors, are the legal vultures. Perhaps, vultures is too good a name for them; vultures clean up the landscape. These loathsome legal scavengers are not interested in cleansing. They are after the financial jugulars of the doctors and hospitals, and there seems to be no defense against them. Super-expensive "defensive" medicine has not been an answer.

In my wildest dreams, I see a Utopia where there is an open hunting season on legal vultures, as well as on squirrels, rabbits, and deer. Alas, it is always just a dream; I always awaken to USA-1986.—**L.A. Arata, M.D., Shelbyville**

OR and NOT—The Basic 2

Commentary

In 1913 Alfred North Whitehead and Bertrand Russell said in *Principia Mathematica* that all logical thought could be reduced finally to dysjunction or contradiction—"ors" and "nots". These two final or basic terms were non-analyzable or irreducible. These two men were "plowing new ground" with these statements.

These statements were taught to many philosophy students in symbolic logic for years afterwards.

A few years ago, while taking a night course in electric motor control with a group of apprentice electricians, we were shown the fundamentals of the construction and function of "NORS", made by the Square D electrical company.

The NORS consisted of one "or" and one "not" for each NOR in a transistorized circuit. They were the simplest component of motor control. The "NANDS", made by GE at that time, consisted of "nots" and "ands," and they were more complex in construction—just as the definition of "and" in symbolic logic is more complicated than "or."

I was surprised to see this old didactic principle from school, that teachers were not sure about how it would work in the practical, real world—being used in a highly competitive market.

Square D with its NORS had a competitive edge on the other makers of logic circuitry that depended on NANDS or other more complicated building blocks for years.

Seeing this principle from school being used in a competitive market made a believer out of me. "Or" and "not"—not "and" or any other words, are basic to our logical thinking.—**R. J. Noveroske, M.D., Newburgh**



AUXILIARY REPORT

Alfrieda Mackel (Mrs. Frederick)
ISMA Auxiliary President 1986-87

American Medical Association-Education Research Association is better known by its initials AMA-ERF. This foundation provides funds to medical schools to maintain quality education and to insure competent students remain in medical school. AMA-ERF has two distinct catagories.

The Medical School Excellence Fund provides unrestricted money to medical schools. These monies can be used in any way the Administration feels would promote quality education. At Indiana University the Excellence Fund rewards students participating in the "Summer Research Program." Students in their first year of Medical School apply to this program by writing a "research proposal." If accepted, these students spend the summer working with a mentor on their project. At the end of the summer, all summer research students present a summary of their work during a special exhibit known as "Poster Day."

David Porter says, "The participation in the program is bettering my analytical abilities (and) broadening my understanding of the research field." Meredith E. Driscol conveys her excitement: "Not only did I acquire laboratory skills and a general knowledge of research procedures, but I was able to work on my own project and generate some interesting and useful data."

All 37 of the 1986 research students express their enthusiasm for their project, and their appreciation for the funding that enabled them to spend this summer in research.

The second category of AMA-ERF funds, the Medical Student Assistance Fund, is used by medical schools for direct financial aid to students. At Indiana University Medical School, these students must demonstrate financial need. The students receiving this aid are truly grateful.

Janalyn Phegley expresses her appreciation in a letter: "It has been especially difficult this year to receive enough financial aid to cover tuition and living expenses. Your assistance is greatly appreciated." Anita Spitz says, "The extra (funds) will allow me the luxury of not taking out additional loans to pay the extra expenses incurred by being a senior, such as interviews and applications for residency positions."

The Holiday Sharing Card is the most widely used fund-raiser for AMA-ERF. One advantage is this sharing card eliminates the need for the medical community to exchange Christmas Cards, saving time and expense. The Sharing Card wishes everyone a Happy Holiday. In Indiana, each county selects a card, and organizes the project in its own way. Several counties create their own design. A few energetic counties hand-deliver their cards. Letters are mailed in early fall requesting donations, and a list of donors is included inside each sharing card. This contribution to AMA-ERF is a special way for physicians and their families to share their Holiday Greetings.

The ISMA-Auxiliary Board will continue a tradition of sending a "Board Sharing Card" this year. The card has been designed by Muriel Osborne, past ISMA-A president and an accomplished artist. As members of the ISMA-A State Board, this is our way of sending a personal greeting to Board members, past state presidents and county presidents, while making a donation to AMA-ERF.—**Andy Kuipers and Josette Rolley**

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Dr. Schuster Appointed to Committee on Retardation

Dr. Dwight W. Schuster of Indianapolis has been appointed by President Reagan to the Committee on Mental Retardation.

The committee advises the President and the Secretary of Health and Human Services on matters relating to programs and services for persons who are mentally retarded, and evaluates the adequacy of current practices in these programs.

Dr. Schuster is Clinical Professor of Psychiatry at Indiana University School of Medicine and Director of the Dept. of Psychiatry at Methodist Hospital of Indiana. He will serve a three-year term on the committee.

Here and There . . .

Dr. Alfred E. Hollenberg of Hagerstown and **Dr. George M. Johnson** of Richmond have been named by Reid Memorial Hospital as recipients of the 1986 Paul S. Rhoads Humanity in Medicine Award.

Dr. Philip E. Prather of Kokomo has been recognized for 30 years of membership in the American Academy of Family Physicians.

The LaPorte Hospital recently honored three of its physicians who are retiring from active medical practice; they are **Dr. Clement H. Elshout**, an anesthesiologist, **Dr. David D. Oak**, a family physician, and **Dr. William K. Scupham**, an internist.

Dr. Thomas E. Woerner of Indianapolis, former president of the Marion County Chapter, American Heart Association, has been named "Medical Doctor of the Year" by the association's Indiana affiliate.

Dr. David C. Hall of Indianapolis has been certified by the American Board of Neurological Surgery.

Dr. Shirley M. Mueller of Indianapolis was co-chairman at a scientific session on Cerebrovascular Disease at the annual meeting in October of the American Neurological Association, held in Boston.

Dr. Juan J. Correa of Terre Haute was guest speaker at an October meeting at Union Hospital of the "I Can Cope" cancer support group.

Dr. Jose C. Torres of Jeffersonville attended the Second International Symposium on Obesity Surgery, conducted Sept. 10-14 in Israel; he presented a paper entitled, "Gastric Bypass Curvature Distal Roux-en-Y."

Address Change

The Health Professions Service Bureau, which includes the Indiana Pharmacy Board and the Medical Licensing Board of Indiana, has a new address: One American Square, Suite 1020, P.O. Box 82067, Indianapolis, Ind. 46282.

The Bureau's telephone number is still (317) 232-2960.

Dr. Richard T. Senn of Kokomo attended the American Urological Association's Postgraduate Seminar on Ureteroscopy in Houston, Sept. 26-28.

Dr. Wilbur D. McFadden of North Manchester was guest speaker at a September meeting of the Multiple Sclerosis Support Group in Wabash.

Dr. Jose G. Panszi and **Dr. John D. Wulff**, Muncie neurologists, were guest speakers at a September meeting in Muncie of the Parkinson's Support Group.

Dr. Kathleen Beck-Coon of Anderson discussed infertility at an October session of Community Hospital's Women and Health program.

Dr. Ralph D. Millsaps of Evansville discussed cardiac catheterization at a September meeting of the Mended Hearts at Deaconess Hospital.

Dr. Randolph W. Lievertz of Indianapolis lectured on the "Clinical Pharmacology and Pharmacokinetics of Estrogen" at a September closed invitational symposium in Canada dealing with the management of menopausal and post-menopausal patients.

Dr. R.P. Unni, a Merrillville urologist, discussed impotence and its treatment at an October program conducted at the Methodist Hospital Southlake Campus.

Dr. Carolyn N. Rawlins, a Munster obstetrician, was guest speaker at an October breast feeding workshop conducted at Indiana University Northwest in Gary.

Dr. Kenneth A. Smith, a Fort Wayne rheumatologist, conducted a public forum on arthritis in October at the Decatur Community Care Center.

Dr. Daniel E. Scherb and **Dr. Joel R. Wachs** of South Bend have been elected to fellowship in the American College of Cardiology.

Dr. James M. Fink of South Bend discussed "Health Awareness—Identifying the Risks" during a three-part lecture series on heart disease in October.

Dr. Kenneth M. Spicklemire, a family physician, has been elected president of the Terre Haute Medical Education Foundation; he is CME director at Union Hospital.

Dr. Robert M. LaSalle of Wabash has been elected to fellowship in the American Academy of Family Physicians.

Dr. Stephen W. Perkins of Indianapolis presented a paper entitled, "Lateral Tarsal Strip Procedure," at the recent meeting in San Antonio of the American Academy of Facial Plastic and Reconstructive Surgery.

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ANCHOR H.M.O. is a well-established, federally qualified health maintenance organization affiliated with Rush-Presbyterian-St. Luke's Medical Center of Chicago. Currently we operate eighteen multispecialty group offices. We seek an Internist or Family Practitioner.

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NEWS NOTES

For the Asking

• "Diet and Exercise in Noninsulin-Dependent Diabetes Mellitus" is the subject of a Consensus Development Conference being conducted this month by the National Institutes of Health. For a copy of the consensus statement or a videotape summarizing the recommendations, write to Sharon Feldman, Prospect Associates, 1801 Rockville Pike, Suite 500, Rockville, Md. 20852.

• The National Committee for Prevention of Child Abuse announces the publication of two pamphlets. One deals with the prevention of "loss of self-esteem" and how to regain your pride. The other is a complete revision of "Emotional Maltreatment of Children." For more information or to order, write NCPCA, 332 S. Michigan Ave., Suite 950, Chicago 60604, or call (312) 663-3520.

• The Pfizer Hospital Products Group is offering $50,000 as an "Award for Innovation" in medical devices. Any person in a health care-related field is eligible to submit an entry. The medical device should be designed to manage or treat diseases. The application dead line is Jan. 30, 1987. For information write George Flouty, M.D., Pfizer Hospital Products Group, 235 E. 42nd St., New York, N.Y. 10017.

• The sixth edition of Drug Evaluations is currently in print. The comprehensive work was prepared by clinical pharmacologists in the AMA's Dept. of Drugs, in cooperation with more than 500 nationwide experts in drug therapy. The volume contains information on more than 1,900 prescription and non-prescription drugs. It also provides essential information on more than 70 new drugs and more than a hundred new investigational agents and uses. To order copies or to obtain information, call toll-free, 1-800-621-8335.

• "Cancer Screening" is a new 26-page booklet published by the American Council on Science and Health. It emphasizes that, with the proper screening tests which detect the three major forms of cancer in a very early stage, and with the proper treatment, the cure rate of the three major malignancies can be raised to almost 100%. Cancers of the uterine cervix, the breast, and colon are now almost 100% curable, with proper surveillance followed by effective early treatment. The pamphlet, which should be standard reading material in physicians' offices and should be a reference source for all news media, should be the foundation for all public education projects. For a copy, send a SSAE (66¢, #10) to Cancer Screening Report, ACSH, 47 Maple St., Summit, N.J. 07901.

Minor's Request for Waiver of Parental Consent to Abortion Denied by Court

A trial court's findings that a minor was not sufficiently mature to make an abortion decision were supported by sufficient evidence, the Indiana Supreme Court has ruled.

The 14-year-old minor was under the guardianship of the Dept. of Public Welfare. Examinations indicated that she was from 18 to 23 weeks pregnant, and a physician stated that the fetus would not be viable if delivered. The Department refused to consent to an abortion, and the trial court denied the minor's petition for waiver of parental consent.

On appeal, the court said that the lower court had before it sufficient evidence to decide whether an abortion would be in the minor's best interest.—*In the Matter of T.H., 484 N.E.2d 568 (Ind. Sup. Ct., Oct. 29, 1985).* (Courtesy of *The Citation*, Sept. 1, 1986).

Physician Recognition Awards

The following ISMA physicians are recent recipients of the AMA's Physician Recognition Award. This award is official documentation of Continuing Medical Education hours earned, and is acceptable proof in most states requiring CME in re-registration that the mandatory hours of CME have been accomplished.

Albert, Raphael E., Michigan City
Allen, George S., Georgetown
Andrews, Ronald K., New Palestine
Ang, Robert T., Merrillville
Babu, Sajja L., LaPorte
Bergan, Joseph A., Michigan City
Bluth, Steven A., South Bend
Eliades, Anne, Muncie
Friedman, Morris S., South Bend
Harris, Jack A., Marion
Hendrix, Charles E., Vincennes
Horning, Richard R., Logansport
Huber, Richard G., Bedford
Jackson, Valerie P., Indianapolis
Johnson, Angela L., Muncie
Johnston, Richard M., Fort Wayne
Kent, Richard N., Fort Wayne
Krol, Katharine L., Granger
Kuhn, Arthur J., Munster
Lourie, Bernard, Evansville
Myers, Debra J., Indianapolis
Ng, Anastacio C., Indianapolis
Pyle, Susan K., Union City
Rusche, Thomas J., Newburgh
Stafford, Joseph A., Fort Wayne
Van Hove, Eugene D., Carmel
Wilson, Fred M., Carmel
Wilson, R.S., Vincennes
Woodward, William M., Westville
Yolles, Elliott A., Indianapolis

Report Urges Fortifying Cereal-Grain Products

Hoffman-La Roche has added "The Cereal-Grain Fortification Gap" to its *Public Issue Report* series. The author is Dr. Paul Lachance, Professor of Nutrition at Rutgers.

The big idea is that, with the trend to lower calories, most citizens are missing out on vitamins and minerals, and other nutrients. Dr. Lachance points out that the cereal-grain group in the diet aids in remedying the nutrient shortage, and should be fortified to assure proper intake.

24 Surgeons Attend Cataract Surgery Workshop

Twenty-four eye surgeons from Indiana, Ohio and Kentucky attended an October two-day workshop at Methodist Hospital in Indianapolis that dealt with advanced cataract surgery technique.

The use of ultrasound to effect fragmentation and pulverization of a cataract (phacoemulsification) was discussed by several nationally known experts. The emulsification and suction removal of the cataract may be performed through a 1/8-inch incision. The course director, Dr. Hans R. Wilbrandt of Indianapolis, explained that a foldable, soft silicone intraocular lens may be inserted through the same incision.

Ronald McDonald House at I.U. Medical Center to Become World's Largest

The four-year-old Ronald McDonald House at the I.U. Medical Center in Indianapolis will soon become the largest such facility in the world.

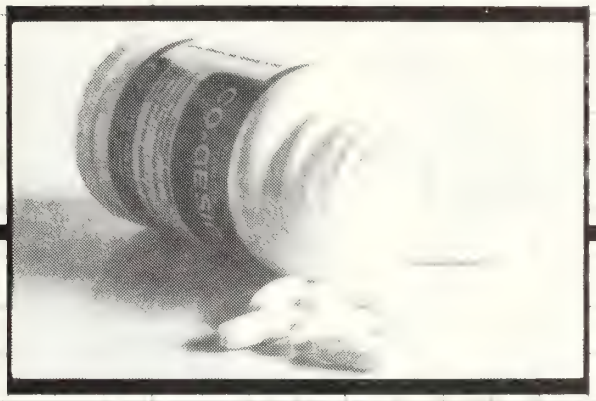
Plans call for expanding the building by adding a wing that will double the present capacity. The wing will be called McDonald's Family Place and will be used to accommodate the increasing number of families using the Ronald McDonald House. It also will include facilities for recuperating bone marrow transplant patients and other adults and young people using the specialized research and treatment resources at the I.U. Medical Center.

Malpractice Premiums Rise

The General Accounting Office is conducting a series of studies on medical malpractice. In the second report in this series, it is stated that the total medical malpractice insurance costs for physicians and hospitals have nearly doubled in two years—and will increase substantially this year. The two-year increase was from $2.5 billion to $4.7 billion.

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Contraindications: Concomitant use with other potassium-sparing agents such as spironolactone or amiloride. Further use in anuria, progressive renal or hepatic dysfunction, hyperkalemia. Pre-existing elevated serum potassium. Hypersensitivity to either component or other sulfonamide-derived drugs.

Warnings: Do not use potassium supplements, dietary or otherwise, unless hypokalemia develops or dietary intake of potassium is markedly impaired. If supplementary potassium is needed, potassium tablets should not be used. Hyperkalemia can occur, and has been associated with cardiac irregularities. It is more likely in the severely ill, with urine volume less than one liter/day, the elderly and diabetics with suspected or confirmed renal insufficiency. Periodically, serum K^+ levels should be determined. If hyperkalemia develops, substitute a thiazide alone, restrict K^+ intake. **Associated widened QRS complex or arrhythmia requires prompt additional therapy.** Thiazides cross the placental barrier and appear in cord blood. Use in pregnancy requires weighing anticipated benefits against possible hazards, including fetal or neonatal jaundice, thrombocytopenia, other adverse reactions seen in adults. Thiazides appear and triamterene may appear in breast milk. If their use is essential, the patient should stop nursing. Adequate information on use in children is not available. Sensitivity reactions may occur in patients with or without a history of allergy or bronchial asthma. Possible exacerbation or activation of systemic lupus erythematosus has been reported with thiazide diuretics.

Precautions: The bioavailability of the hydrochlorothiazide component of 'Dyazide' is about 50% of the bioavailability of the single entity. Theoretically, a patient transferred from the single entities of triamterene and hydrochlorothiazide may show an increase in blood pressure or fluid retention. Similarly, it is also possible that the lesser hydrochlorothiazide bioavailability could lead to increased serum potassium levels. However, extensive clinical experience with 'Dyazide' suggests that these conditions have not been commonly observed in clinical practice. Angiotensin-converting enzyme (ACE) inhibitors can elevate serum potassium; use with caution with 'Dyazide'. Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids, and during concurrent use with amphotericin B or corticosteroids or corticotropin [ACTH]). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Cumulative effects of the drug may develop in patients with impaired renal function. Thiazides should be used with caution in patients with impaired hepatic function. They can precipitate coma in patients with severe liver disease. Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis, and aplastic and hemolytic anemia have been reported with thiazides. Thiazides may cause manifestation of latent diabetes mellitus. The effects of oral anticoagulants may be decreased when used concurrently with hydrochlorothiazide; dosage adjustments may be necessary. Clinically insignificant reductions in arterial responsiveness to norepinephrine have been reported. Thiazides have also been shown to increase the paralyzing effect of nondepolarizing muscle relaxants such as tubocurarine. Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Antihypertensive effects may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. Triamterene has been found in renal stones in association with the other usual calculus components. Therefore, 'Dyazide' should be used with caution in patients with histories of stone formation. A few occurrences of acute renal failure have been reported in patients on 'Dyazide' when treated with indomethacin. Therefore, caution is advised in administering nonsteroidal anti-inflammatory agents with 'Dyazide'. The following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with possible metabolic acidosis. 'Dyazide' interferes with fluorescent measurement of quinidine. Hypokalemia is uncommon with 'Dyazide', but should it develop, corrective measures should be taken such as potassium supplementation or increased dietary intake of potassium-rich foods. Corrective measures should be instituted cautiously and serum potassium levels determined. Discontinue corrective measures and 'Dyazide' should laboratory values reveal elevated serum potassium. Chloride deficit may occur as well as dilutional hyponatremia. Concurrent use with chlorpropamide may increase the risk of severe hyponatremia. Serum PBI levels may decrease without signs of thyroid disturbance. Calcium excretion is decreased by thiazides. 'Dyazide' should be withdrawn before conducting tests for parathyroid function. Thiazides may add to or potentiate the action of other antihypertensive drugs. Diuretics reduce renal clearance of lithium and increase the risk of lithium toxicity.

Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis, rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting, diarrhea, constipation, other gastrointestinal disturbances; postural hypotension (may be aggravated by alcohol, barbiturates, or narcotics). Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and respiratory distress including pneumonitis and pulmonary edema, transient blurred vision, sialadenitis, and vertigo have occurred with thiazides alone. Triamterene has been found in renal stones in association with other usual calculus components. Rare incidents of acute interstitial nephritis have been reported. Impotence has been reported in a few patients on 'Dyazide', although a causal relationship has not been established.

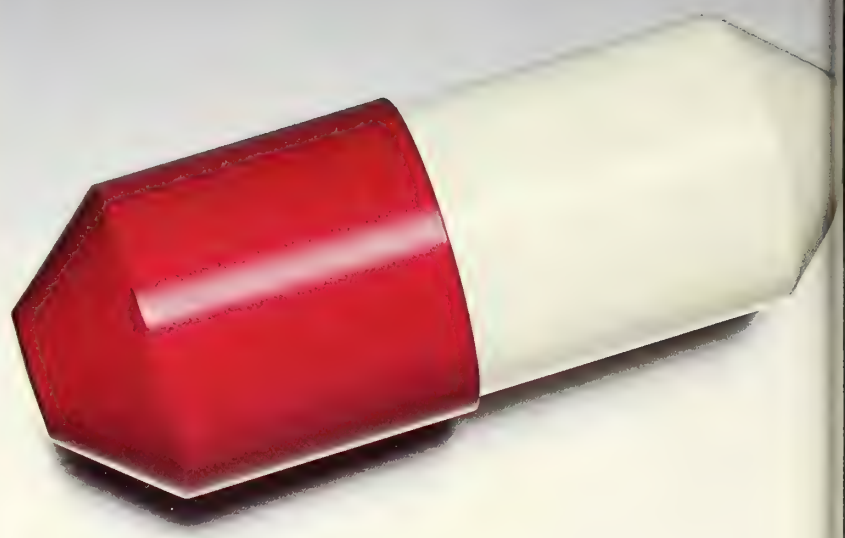
Supplied: 'Dyazide' is supplied as a red and white capsule, in bottles of 1000 capsules; Single Unit Packages (unit-dose) of 100 (intended for institutional use only); in Patient-Pak™ unit-of-use bottles of 100.

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OBITUARIES

Lavon D. Bechtol, M.D.

Dr. Bechtol, 68, retired medical research director for Eli Lilly and Company, died Aug. 24 in Nova Scotia, where he was vacationing with his family.

He was a 1947 graduate of Johns Hopkins University Medical School and was an Army-Air Corps veteran of World War II. He retired in 1984 and moved from Indianapolis to Punta Gorda, Fla.

Dr. Bechtol's professional affiliations included the Aerospace Medical Association and the American Society for Clinical Pharmacology and Therapeutics.

Arthur N. Ferguson, M.D.

Dr. Ferguson, 89, a retired Fort Wayne internist, died Sept. 19 in Walnut Creek, Calif., where he had lived in recent years.

He was a 1929 graduate of Rush Medical College and was an Army veteran of World War II.

Dr. Ferguson retired in 1972 from the Duemling Clinic where he had practiced since 1933. He was a diplomate of the American Board of Internal Medicine and was a member of the ISMA Fifty Year Club. He was a fellow of the American College of Physicians and was a former president of the Allen County Medical Society.

Lall G. Montgomery, M.D.

Dr. Montgomery, 84, who served many years as chief pathologist at Ball Memorial Hospital, Muncie, died Oct. 1.

He was a member of INDIANA MEDICINE's Editorial Board for six years during the 1940s and had been a Consulting Editor for the past 33 years.



Dr. Montgomery

FILE PHOTO

Dr. Montgomery, who was born in Canada, was a 1929 graduate of the University of Manitoba Medical School. He spent three years as a Fellow in Pathology at the Mayo Clinic.

He was a founding fellow of the College of American Pathologists and a former president of the American Society of Clinical Pathologists. He was a member of the ISMA Fifty Year Club.

Dr. Montgomery served 20 years as an AMA delegate for the Section on Pathology and was a past president of the Delaware County Medical Society. For 24 years, he was chairman of the Board of Registry of Medical Technologists, which formerly had its headquarters in Muncie. During his career, he wrote more than 40 articles for the medical literature.

William B. Triplett, M.D.

Dr. Triplett, 63, an Evansville allergist, died Aug. 25 at his home.

He was a 1953 graduate of the University of Louisville School of Medicine. He retired from practice in January.

Dr. Triplett, who practiced in Owensboro, Ky., opened the Tri-State Allergy and Asthma Clinic in Evansville in 1978. His professional affiliations included the American College of Allergists, the American Thoracic Society and the American Academy of Allergy and Immunology.

James H. Hawk, M.D.

Dr. Hawk, 72, a former director of the State Board of Health's Division of Medical Care Administration, died Aug. 22 at Methodist Hospital, Indianapolis.

He was a 1934 graduate of Indiana University School of Medicine and was a Navy veteran of World War II.

Dr. Hawk retired in 1974 after eight years with the Board of Health. He had a private Ob/Gyn practice from 1936 to 1967. He was a founding fellow of the American College of Obstetricians and Gynecologists, and was a former chairman of the Ob/Gyn departments at two Indianapolis hospitals. He was a member of the ISMA Fifty Year Club.

Memorials: Indiana Medical Foundation

The Indiana Medical Foundation, Inc. was formed by the Indiana State Medical Association "for religious, charitable, scientific, literary or educational purposes." It provides financial assistance to support the educational mission of INDIANA MEDICINE.

Contributions made to the Foundation are deductible by donors in accordance with the Internal Revenue Code. Gifts are deductible for Federal estate and gift tax purposes.

The Foundation is pleased to acknowledge the receipt of gifts in remembrance of the following individuals:

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Lloyd A. Vogel, M.D.
Arvine G. Popplewell, M.D.
Mildred Ramsey

Charles W. Magnuson, M.D.

Dr. Magnuson, 63, a South Bend gastroenterologist, died Oct. 2 at Memorial Hospital.

He was a 1951 graduate of the University of Illinois College of Medicine and was a Navy veteran of World War II.

Dr. Magnuson was a diplomate of the American Board of Internal Medicine and a member of the American College of Physicians and the American Society of Internal Medicine. He was the author of several scientific articles and, in 1966, was awarded the Billings Silver Medal for his research on "Heredity and Carcinoma."

He was chief of medicine at South Bend's St. Joseph Medical Center and was on the board of directors of the South Bend Medical Foundation. He was an associate faculty member of the I.U. School of Medicine and was a former president of the Indiana Society of Internal Medicine.

Jack W. Hickman, M.D.

Dr. Hickman, 55, formerly of Indianapolis, died Oct. 8 in Tampa, Fla., where he had lived in recent years.

He was a 1955 graduate of Indiana University School of Medicine. At the time he moved to Florida, he was a faculty member of the I.U. School of Medicine.

Dr. Hickman was deputy dean for faculty relations and a professor of medicine at the University of South Florida at the time of his death. He was a diplomate of the American Board of Internal Medicine and a fellow of the American College of Physicians.



Dr. Magnuson

IUE PHOTO

Gene C. Cunningham, M.D.

Dr. Cunningham, 67, a retired medical manager for the Upjohn Company and former medical manager for Eli Lilly and Company, died Oct. 14 at Methodist Hospital in Indianapolis.

He served with the Coast Guard during World War II. He was graduated from Indiana University School of Medicine in 1953. He retired from his position with Upjohn two years ago.

Dr. Cunningham, who had been medical manager for Lilly's Occupational Health Clinic in Indianapolis from 1958 to 1968, also served 15 years as a medical examiner for the Federal Aviation Administration. He was a member of the Central States Occupational Medicine Association and the American Society of Contemporary Medicine and Surgery.

Joe W. Sovine, M.D.

Dr. Sovine, 82, a retired Indianapolis internist, died Aug. 24 at his home.

He was a 1928 graduate of Indiana University School of Medicine. He was a Navy veteran of World War II and continued in the Naval Reserves, retiring in 1964.

Dr. Sovine was a member of the American College of Chest Physicians and the ISMA Fifty Year Club. Upon his retirement from practice in 1974, he was made an honorary member of the staffs of both Methodist and St. Vincent Hospitals. In 1978 he received a 50-year service award from Indiana University. Two years later, he was named a Sagamore of the Wabash by former Gov. Otis R. Bowen.

Garland R. Gillespie, M.D.

Dr. Gillespie, 84, a retired Brownstown general practitioner and gynecologist, died Oct. 15 at Hoosier Christian Village, Brownstown.

He was a 1934 graduate of the University of Louisville Medical School. He retired from practice two years ago.

Dr. Gillespie, who practiced in Brownstown nearly 50 years, was a past president of the medical staff at Jackson County Memorial Hospital. He was a member of the ISMA Fifty Year Club.

Dr. Gillespie and his wife, Hazel, served as co-chairmen of the Jackson County Fair horse show for 38 years. He had been area governor of the U.S. Pony Trotting Association.



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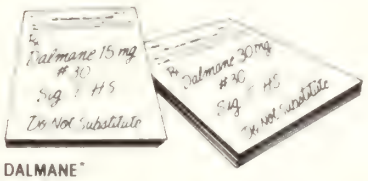
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